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MARCH
1946

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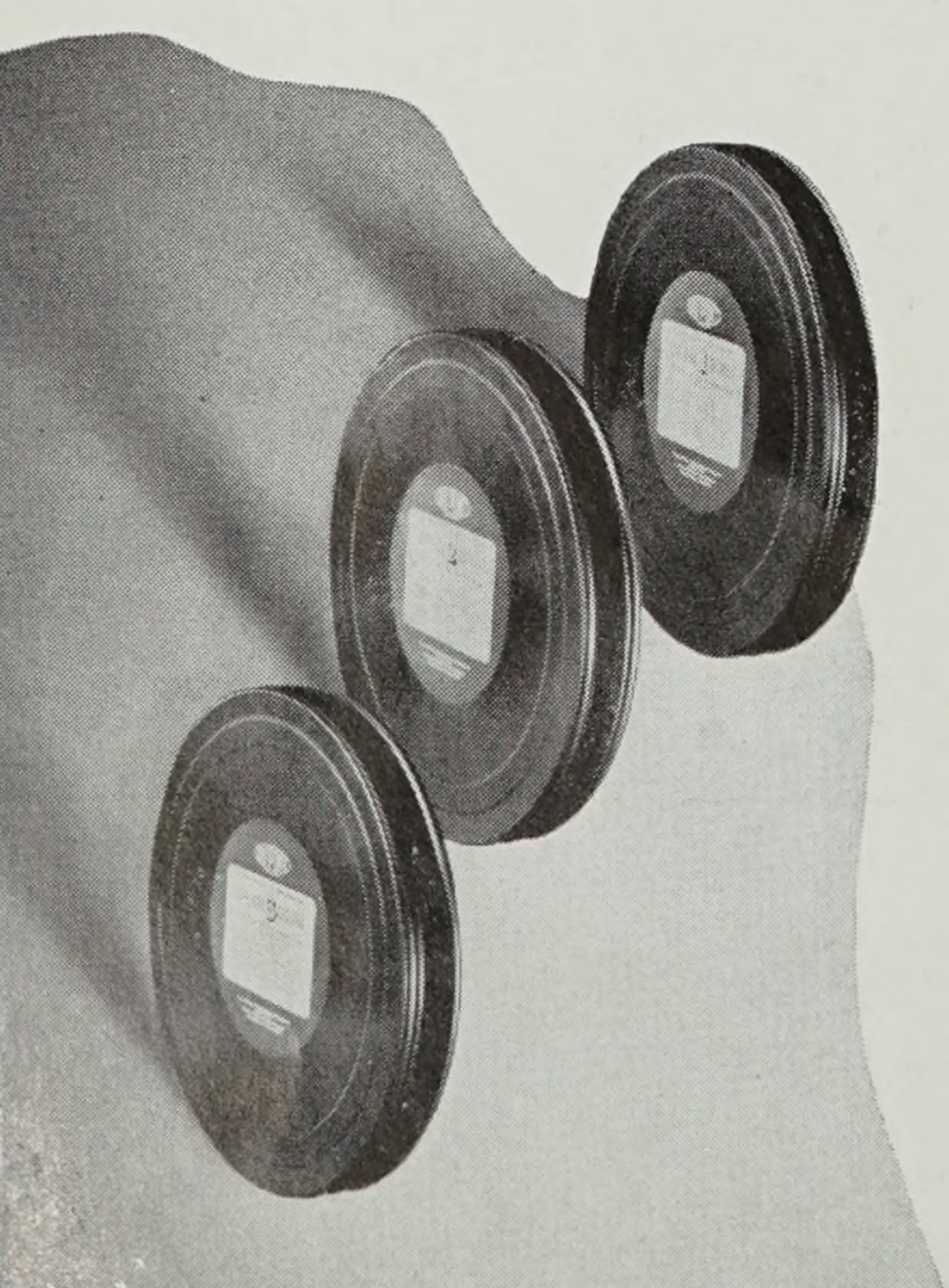

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AMERICAN CINEMATOGRAPHER

THE MOTION PICTURE **CAMERA** MAGAZINE

VOL. 27 MARCH, 1946 NO. 3

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ON THE FRONT COVER is a photograph on the set of Metro-Goldwyn-Mayer's Technicolor production of "The Yearling," with Director Clarence Brown (directly under camera) running through final rehearsal of scene with Jane Wyman. Director of Photography Charles Rosher, A.S.C., is seated on right side of the camera blimp.

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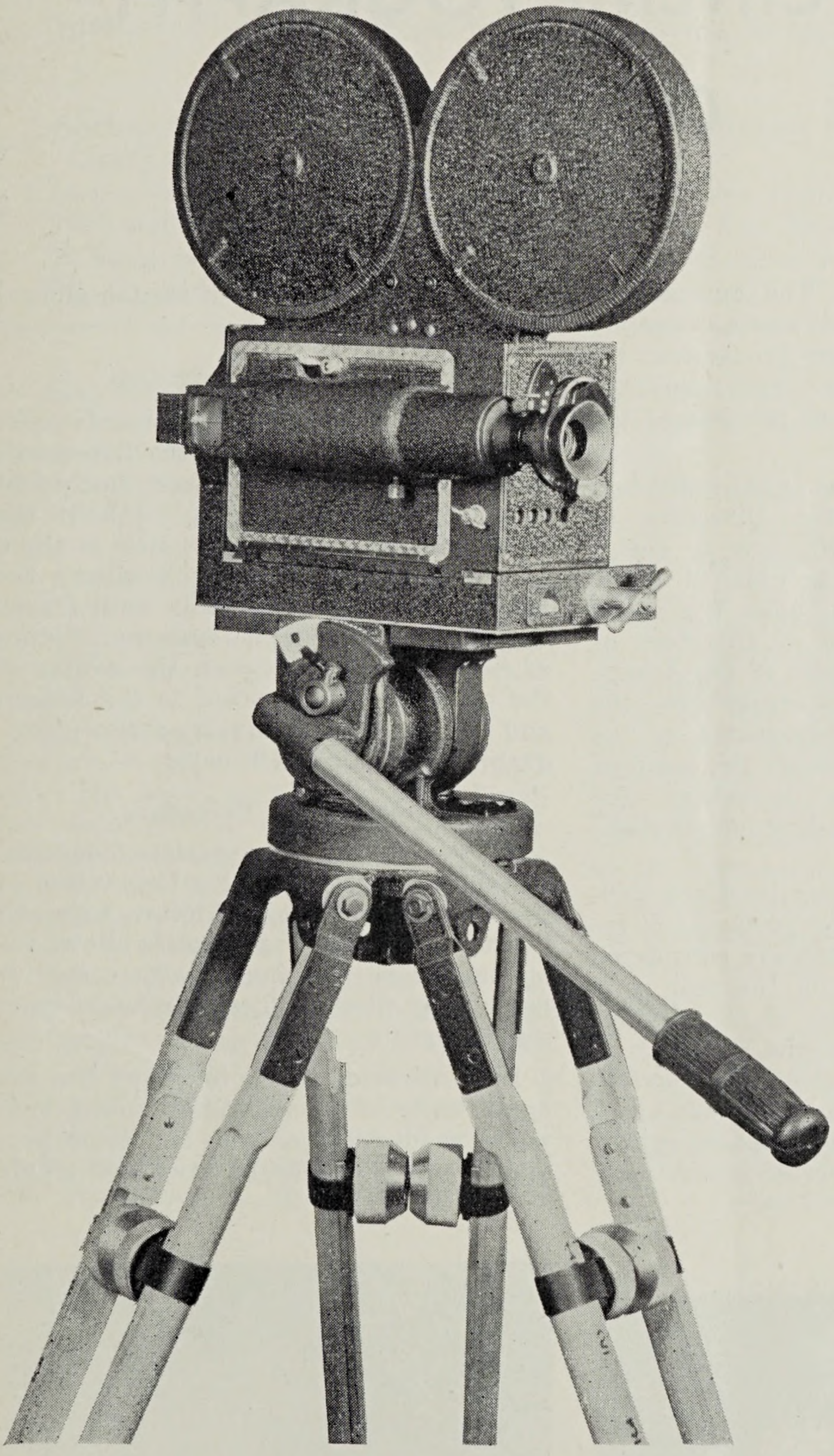
"MITCHELL 16"



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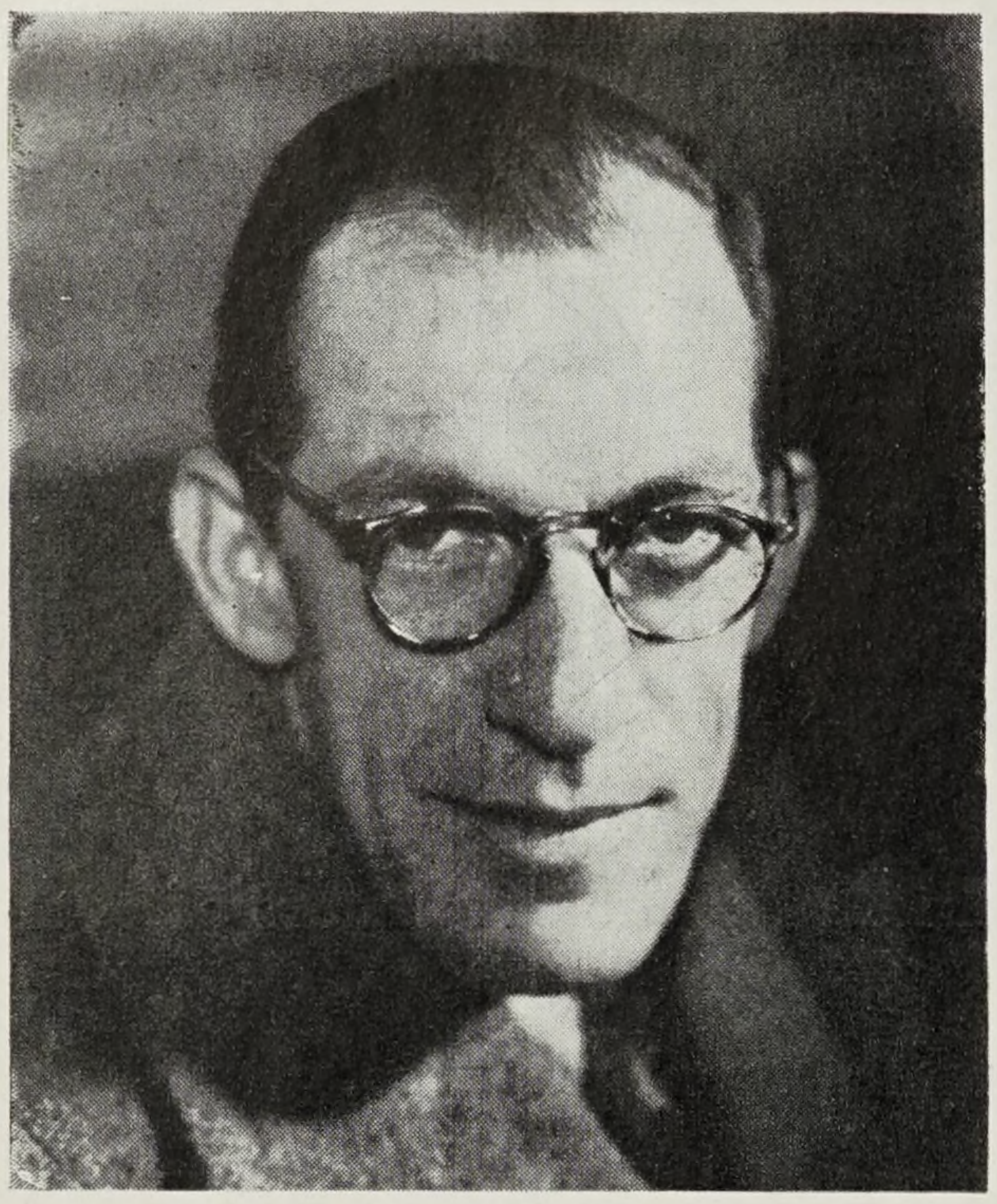
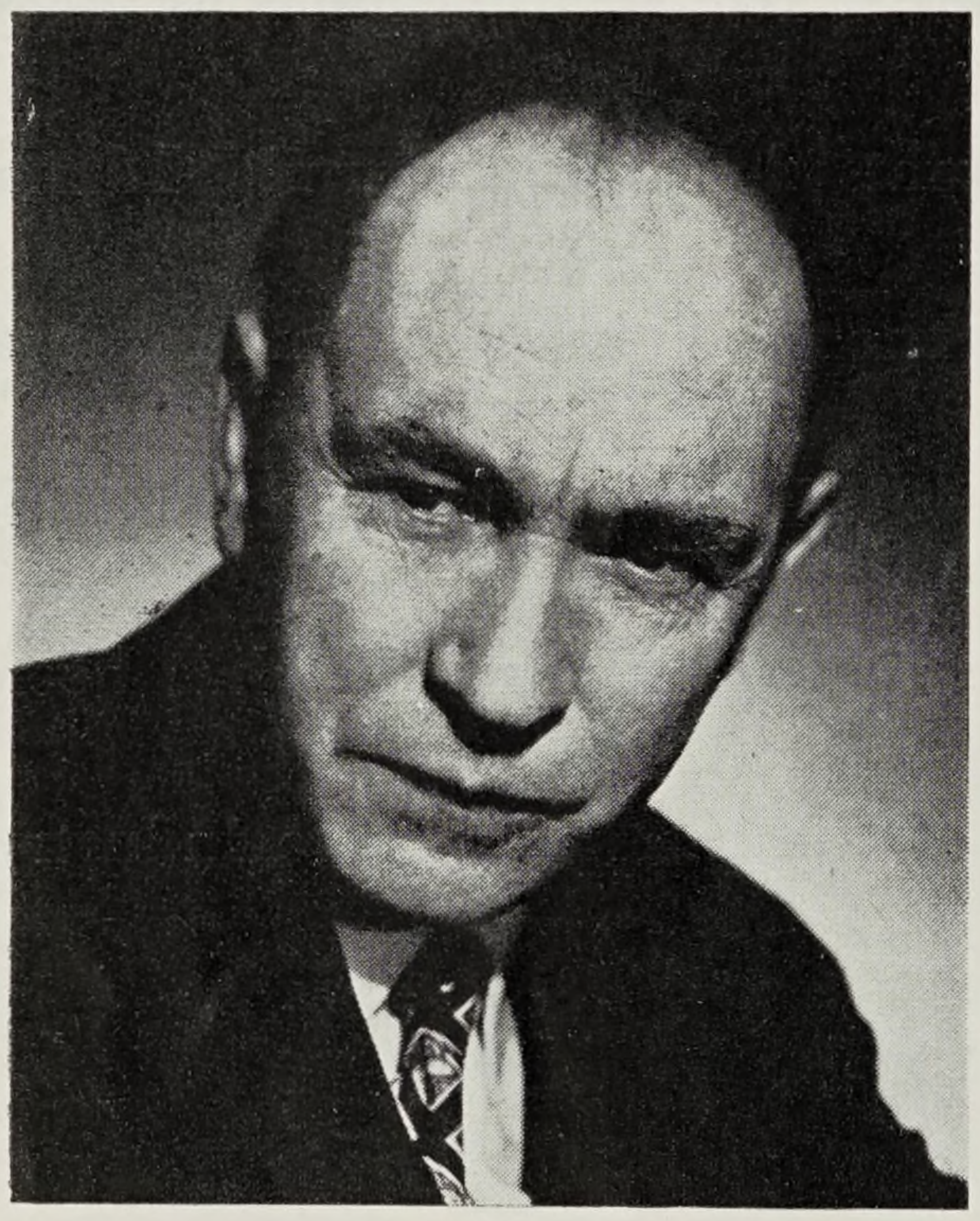


ARTHUR MILLER, A.S.C.
"Keys of the Kingdom"—20th-Fox.



JOHN SEITZ, A.S.C.
"The Lost Weekend"—Paramount.

ACADEMY AWARD NOMINATIONS FOR BEST CINEMATOGRAPHY OF 1945

HERE they are! The outstanding achievements in cinematography on motion picture productions released during the year 1945; selected from the 300 odd feature releases of the year.

And the productions and individual accomplishments of the Directors of Photography responsible, are so designated by the outstanding experts in the field most qualified to make the selections—the entire group of Directors of Photography and members of the American Society of Cinematographers—the latter internationally recognized as the most qualified authorities on the complex photographic qualities necessary for designation as outstanding accomplishments.

Listed herewith are the five black-and-white and the five color productions released during 1945, which are considered the most outstanding by the men who photograph virtually all of the feature products of Hollywood—the Directors of Photography. The combined decision in procedure as set up by the Academy of Motion Picture Arts and Sciences cannot be discounted in its importance and interest for those interested in motion picture photography.

Noteworthy Recognition

There is neither guesswork nor favoritism in selection of either the five nominated productions and their individual Directors of Photography in both the monotone and color fields; nor is there on the final balloting which selects the Academy Award winners in both black-and-white and color photography. Voting in each case is strictly on the merits of the productions submitted to the voters, and their careful analysis of the photographic merits of each entry.

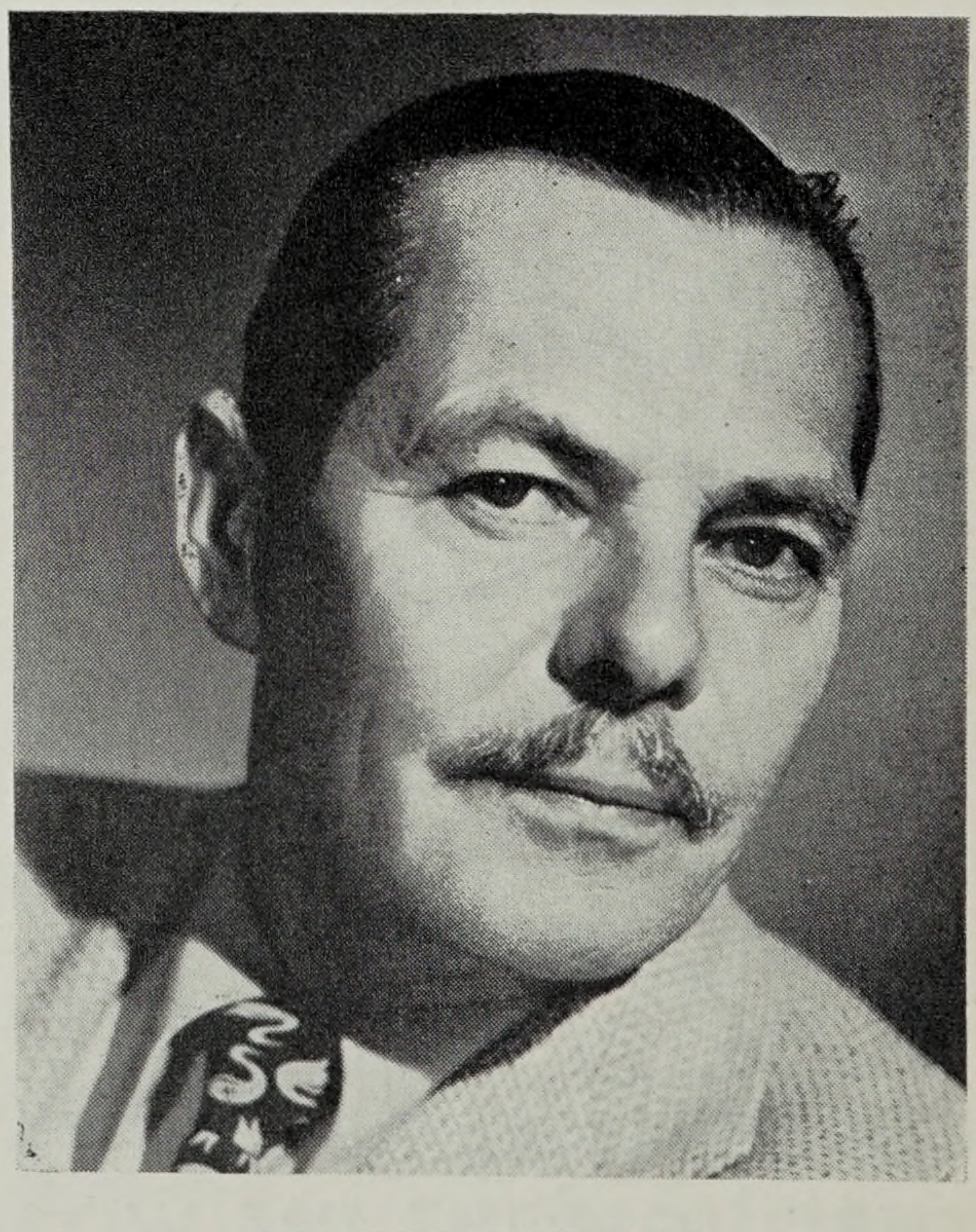
Nomination Procedure

As set up by the special Cinematographic Award Eligibility Committee of the Academy of Motion Picture Arts and Sciences, nomination procedure allows for no haphazard selections, neither does it ignore any film production released during the year.

Each Director of Photography has the opportunity of submitting one black-and-white production, and/or one color production on which he has received single

ERNEST HALLER, A.S.C.
"Mildred Pierce"—Warner Brothers.

HARRY STRADLING, A.S.C.
"Picture of Dorian Gray"—MGM.



GEORGE BARNES, A.S.C.
"Spellbound"—Selznick.
"The Spanish Main"—RKO.

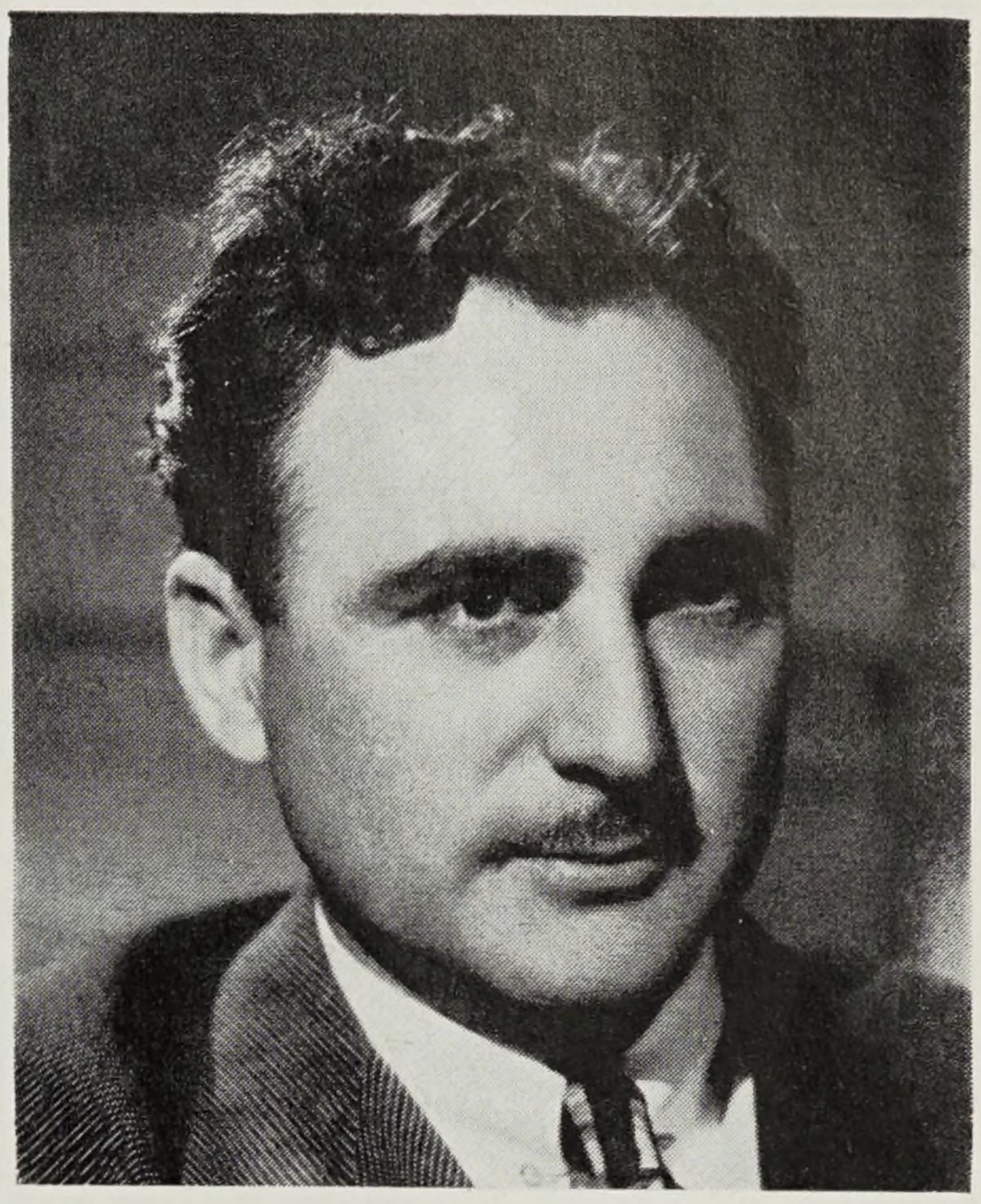
OUTSTANDING CINEMATOGRAPHY OF 1945

BLACK AND WHITE

"Keys of the Kingdom"—20th Century-Fox—by Arthur Miller, A. S. C.
"The Lost Weekend"—Paramount—by John Seitz, A. S. C.
"Mildred Pierce"—Warner Brothers—by Ernest Haller, A. S. C.
"Picture of Dorian Gray"—Metro-Goldwyn-Mayer—by Harry Stradling, A. S. C.
"Spellbound"—Selznick International—by George Barnes, A. S. C.

COLOR

"Anchors Aweigh"—Metro-Goldwyn-Mayer—by Robert Planck, A. S. C. and Charles Boyle, A. S. C.
"Leave Her to Heaven"—by 20th Century-Fox—by Leon Shamroy, A. S. C.
"National Velvet"—Metro-Goldwyn-Mayer—by Len Smith, A. S. C.
"A Song to Remember"—Columbia—by Tony Gaudio, A. S. C.
"The Spanish Main"—RKO—by George Barnes, A. S. C.



LEON SHAMROY, A.S.C.
"Leave Her to Heaven"—20th-Fox.

or joint screen credit. All such productions so submitted are listed on the nomination ballot, with the Directors of Photography of the industry then voting for five pictures in each classification in order of preference. This cross-section of expert opinion has been found to be the best method of determining the five productions of each classification to be presented as the top nominations for the final vote.

But, although the Academy Award can only go to one of the quintette in each class, the final result will not—and cannot—detract from the outstanding photographic merits of the other four productions and the individual Directors of Photography concerned.

Veteran Cinematographers

Of the ten cinematographers recognized for outstanding photography on productions during 1945—all of whom by the way are naturally members of American Society of Cinematographers—it might be pointed out that all are veteran cinematographers with comprehensive experience on film production—and all have been top-ranking artists as Directors of Photography for 15 or more years.

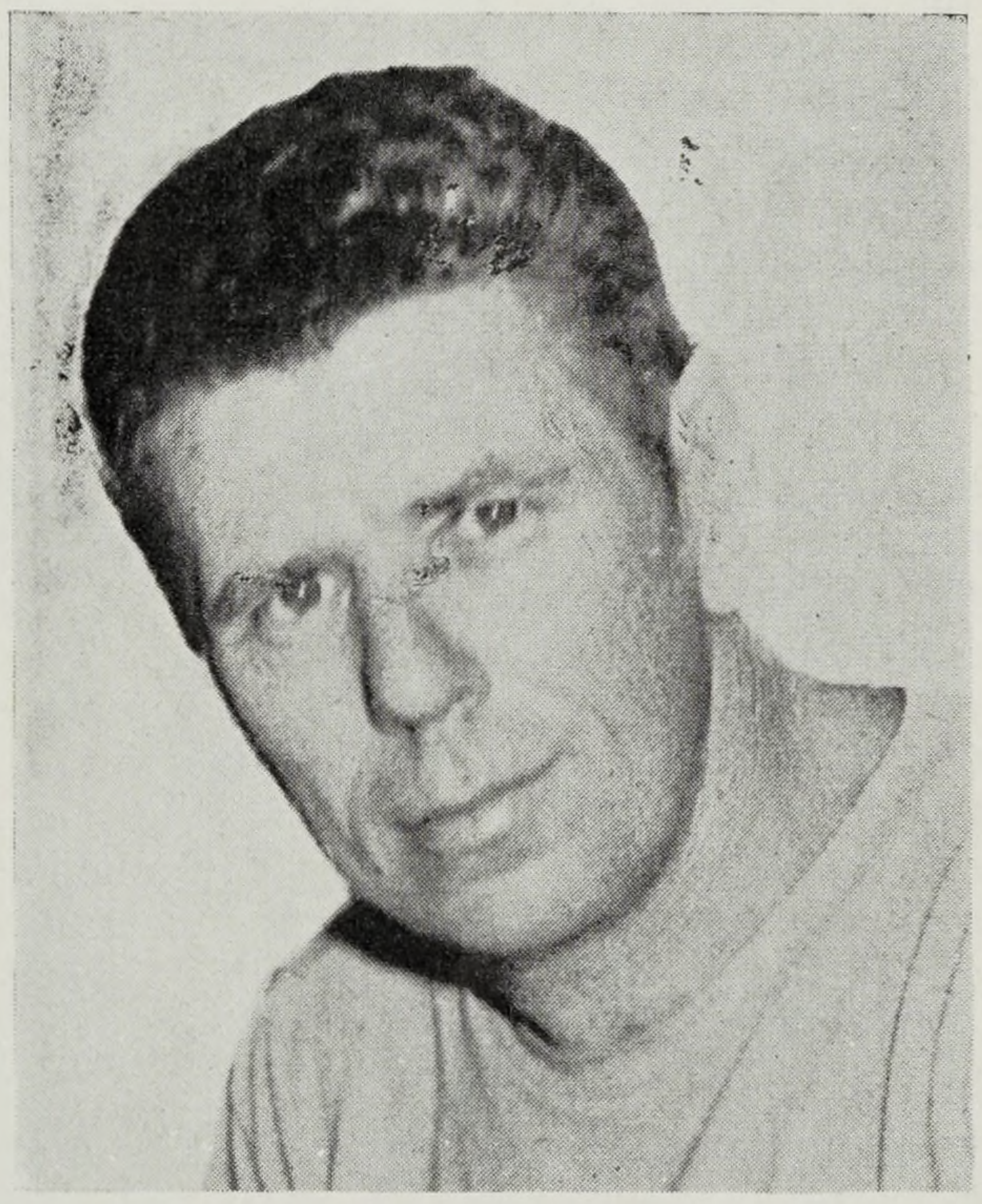
Previous Awards Winners

Half of the ten Directors of Photography who have had their productions nominated for the Academy Oscars on productions released in 1945 are previous Academy Award winners, and two have made the trip to the Award platform on two occasions each. Arthur Miller was the recipient for his excellent photography of "Song of Bernadette" and "How Green Was My Valley"—both 20th-Fox releases and both photographed in black-an-white.

Leon Shamroy, nominated this year for his color photography on "Leave Her To Heaven," tabbed the Oscars for color photography on two previous occasions with his "Wilson" last year and "The Black Swan" several years ago.

Ernest Haller, in the running this year with the black-and-white photography on Warners' "Mildred Pierce," received the

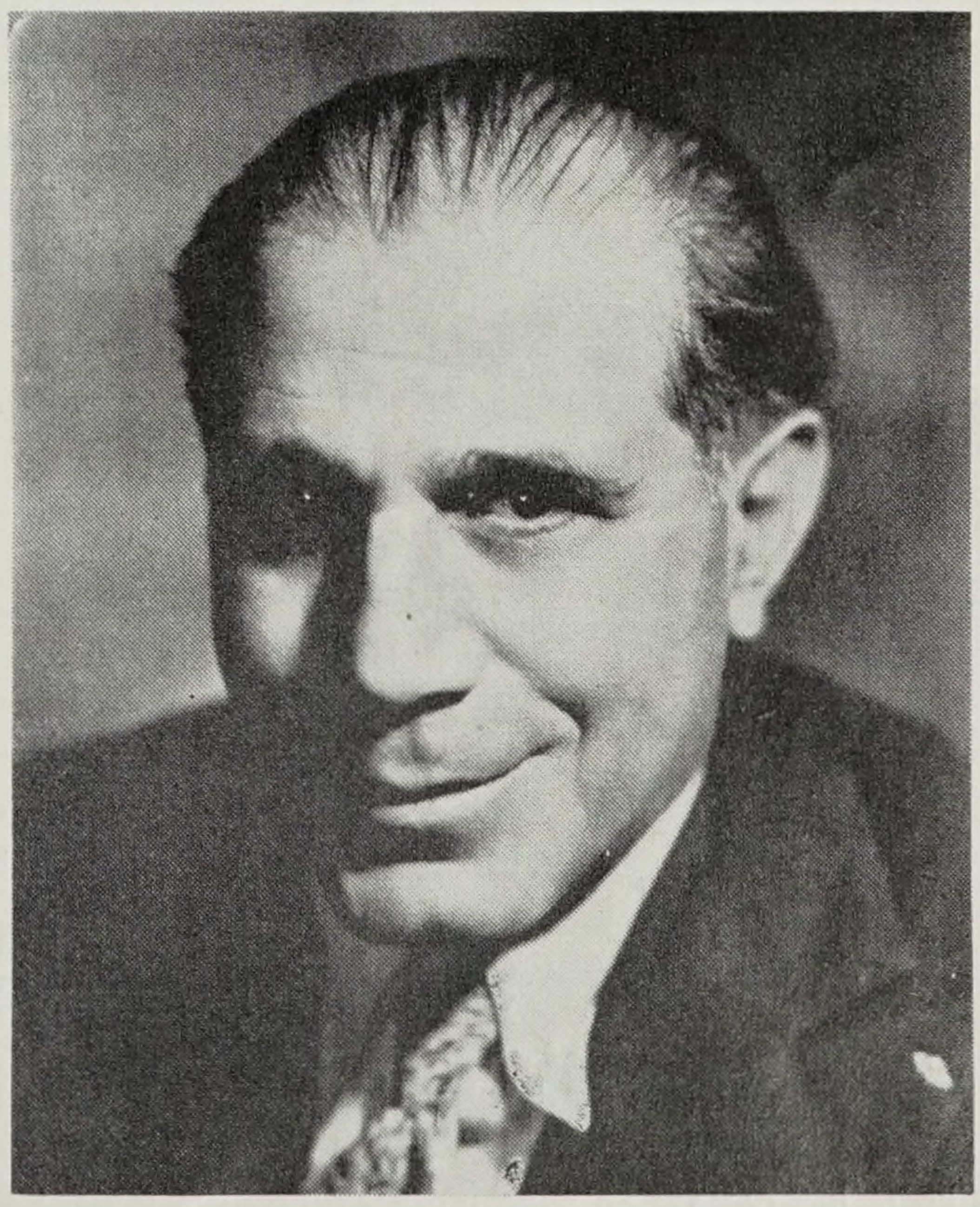
(Continued on Page 90)



LEN SMITH, A.S.C.
"National Valvet"—MGM.

ROBERT PLANCK, A.S.C.

CHARLES BOYLE, A.S.C.
"Anchors Aweigh"—MGM.



TONY GAUDIO, A.S.C.
"A Song to Remember"—Columbia.

CINEMATOGRAPHY IN THE WAR

FILMING ROCKET PROJECTILE TESTS FOR THE NAVY

With Commander Al L. Gilks, A. S. C.

PHOTOGRAPHING rocket projectiles whizzing through the air at speeds up to 1,500 feet per second! Sounds impossible, but nevertheless was successfully accomplished by a Navy photographic unit headed by Commander A. L. Gilks, USNR, and veteran member of the American Society of Cinematographers.

Motion pictures of the testing and development of rocket projectiles proved a most important contribution in speed-up of the research and perfection of such weapons for use in the war. The rocket program, top secret and top priority, was instituted by the Navy Department in association with the National Development Research Council's rocket program at California Institute of Technology, Pasadena, Calif.

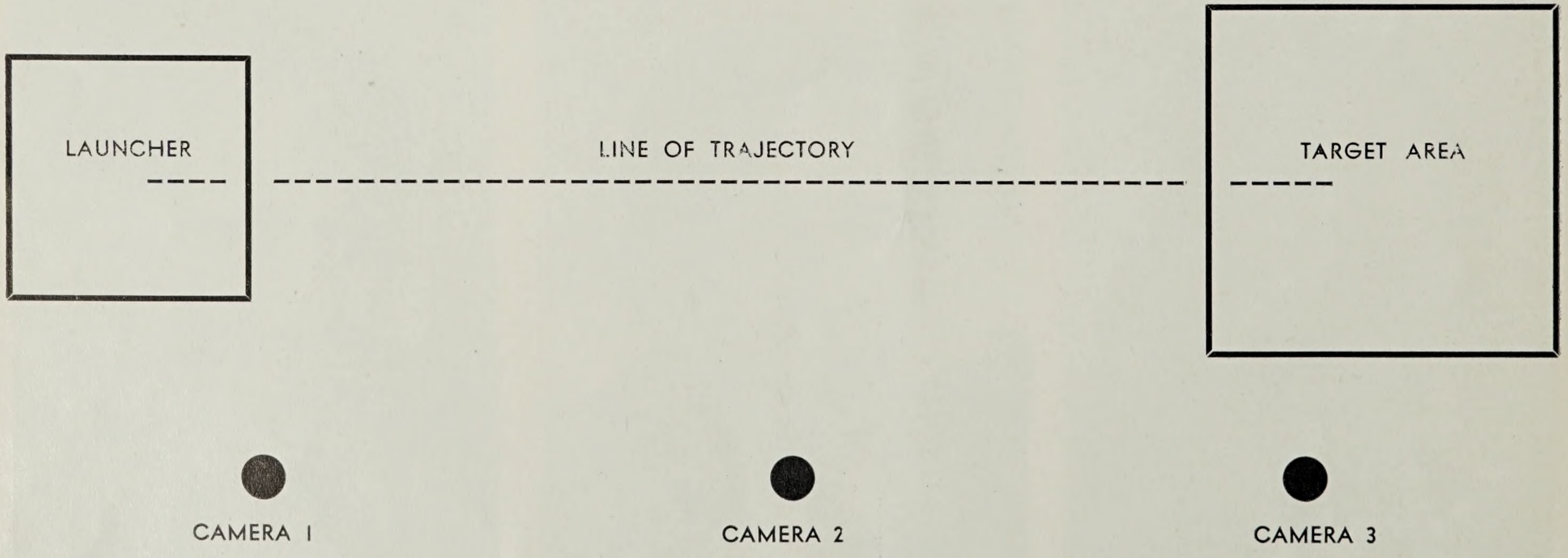
To the scientists and others intimately concerned with the research and development of ground, amphibious, and airborne rocket projectiles, the ability of motion pictures to register the details of launching, trajectory, landing and explosion of a rocket—especially in view of the terrific speed of such flight—was not initially realized. But fortunately, Commander Gilks was requested to make one film dealing with early tests of barrage rockets launched from small landing craft. In carrying out that particular mission, Commander Gilks was brought into contact with the scientists and engineers charged with the development of rocket weapons, who decided that—in view of the initial filming results—that motion pictures could be of inestimable value to the overall program from many angles.

As a result, on his own initiative and with the full blessing of the scientists concerned, Commander Gilks made several short film subjects of other rocket research projects under way at the time. These films, which were actually pioneer visual reports on the tests and developments on rocket weapons, proved so valuable to the scientists and Naval strategists, that Admiral Holmes, USN, naval liason officer, dispatched a request to General William Donovan, chief of the Office of Strategic Services, asking that Commander Gilks be assigned permanently to continue such film work. At this point, he was placed in charge of a small—but highly specialized and capable motion picture unit—of members of which had had wide and extensive experience in the studios.

Gilks Veteran Cinematographer

Commander Gilks is a veteran among the Directors of Photography of Hollywood, having been under term contract to Paramount for a number of years in addition to handling assignments at other major studios. With his vast experience and background in regulation production cinematography, he was most qualified to tackle the problem of getting the required results for the scientists and Naval officials on the rocket projectile program.

Navy veteran of World War I, at conclusion of which he held the rank of Lieutenant (jg), Gilks re-joined the Naval Reserve in 1940. Called to active duty as a Lieutenant, he was assigned to photographic duty with the Office of Strategic Services. Immediately after Pearl Harbor, he was sent to the Panama Canal Zone in charge of a photographic unit to make a highly confidential motion picture report on that area—especially the defense setup of that period. The large amount of film shot was most important to the joint Chiefs of Staff, who viewed it as a visual report more detailed and informative than hundreds of thousands of words. The film, for which Commander Gilks received special commendation, was kept as "top secret" during the entire war, but proved instrumental in quickly correcting certain conditions and situations which needed remedying in the Canal Zone defenses. On the Panama Canal assignmeet, he had under his command a small



Illustrating camera setups for photographing several types of rocket projectile tests. Camera 1 at left—with long focal length lens of two-and-one-half to six inches, depending on requirements—gets detail of launching takeoff in close-up, and follows projectile through to target area. Camera 2—set up midway on line of flight—carries longest focal length lens (four- or six-inch)—catching launching, and providing close-up views in center of flight. Camera 3 also photographs takeoff and trajectory, providing close-up frames in the target area. Great skill was required by the cameramen to keep the speeding rocket in frame during entire course.

photographic unit, but which comprised mainly top-ranking studio cameramen well-qualified for the work through wide experience on foreign filmmaking expeditions and location work.

Pioneering Rocket Photography

Shortly after completing the expedition to Panama, Gilks was sent to Hollywood on temporary duty to procure skilled technical personnel and various photographic equipment for the O. S. S. Navy photographic units. It was during this period that he was requested to do one film project dealing with the testing of barrage rocket launchings from small landing craft.

16mm. Kodachrome Used Exclusively

Commander Gilks, in surveying the problem of photographing the fast-flying rockets, decided that only 16mm. equipment and kodachrome film would be suitable. A large number of important factors dictated this decision. Firstly, the 35mm. cameras were too cumbersome to handle in photographing a speeding rocket projectile—while the cameramen became so expert with the small and lightweight 16mm. cameras that they seldom missed following the rocket and keeping it in the frame, despite the accuracy necessary in following what was little more than a fleeting speck in the sky.

Under the great pressure of wartime development, rocket tests were run off regardless of weather conditions. Color film was essential, as—with black-and-white negative to photograph against a hazy, gray or dirty sky—the color of smoke emitted, color of the flame, and the length of time of burning of the propellant; could not be accurately registered on the film. With monotone negative in bad weather, the smoke and flame would register the same as the background and make the film useless.

With kodachrome, the scientists doing the research were able to get data and information on color of the flame, color of smoke, length of burning time of the propellant—not only at the time of launching and during trajectory—but the same factors when the target was hit.

High Speed Cameras

In the exacting photography required to follow the rockets, normal speed photography was of no value, especially when it is realized that only a few seconds are consumed from the time of launching a rocket projectile until the latter hits the target.

Ninety percent of the photographing on the program was done with high speed cameras turning up at 64 frames per second. Standard 16mm. cameras—EK Cine Special, Bell & Howell, etc.—were used; and hundreds of thousands of feet of film were whipped through with virtually no camera difficulties.

On occasion, cameras rolling up speed of 128 frames per second were employed, particularly on ground tests of experimental firing of the higher-powered rockets from airplane wings. This film detail was particularly desired by the researching scientists for study of high-frequency shock waves on the plane structure.

Commander Al. L. Gilks, A.S.C.

Pioneering Rocket Weapons

The group of scientists charged with testing and development of the rocket weapons started virtually from scratch, insofar as adapting powders for use as propellants, where exacting characteristics of uniform burning were absolutely essential. General characteristics and burning properties of powders were fairly well defined scientifically, but the adaptibility for rocket missiles was an entirely new field. When it is realized that the propellant powder at takeoff from the launching device burns within the space of two seconds, and this particular point required minute and careful study by the researching scientists because of the major importance of the launching period; the contribution of high speed color motion pictures can be appreciated.

Through ability to study and measure the motion picture frames later, instead of depending on eyes catching details of the propellant burning, the scientists were able to materially increase the perfection of various types of rocket weapons during progress of the program. Gyrations of experimental rockets in flight during testing, as registered on the film, indicated correction in design. The research engineers on numerous occasions, were enabled—through film—to study the action and characteristics of the rocket and propellant down to within 1/500th of a second. It might

(Continued on Page 88)

The Fluid Camera

By HERB A. LIGHTMAN

BACK in the days when the motion picture industry was young and cameras were cranked by hand, the term *fluid camera* had not yet been added to the film-maker's lexicon. In those days the camera was clamped in place and, except for an occasional short tilt or *pan*, it remained a static observer of the action that took place before it. Camera movement was all but unknown. Instead, the action was so directed as to fit within the bounds of the static frame, and when the action became too wide for the frame the director cut to another angle.

Later, when western films of the "Let's head 'em off at th'gulch" variety became popular, the camera was mounted on a truck and went bouncing over the landscape recording the chase. This was the beginning of camera movement as it has developed in our present-day photoplay. But it remained for David Wark Griffith, pioneer of so many of our modern cinema techniques, to introduce camera movement as a definite dramatic device in motion picture making.

The film industry has come a long way since the days of "Birth of a Nation." Hollywood cinematographers have developed motion picture photography into one of the highest forms of artistic expression. The camera is no longer a static, inhibited machine. It is now a *fluid* force —a device that not only records action, but by its own movement about the sound stage, adds dramatic emphasis and "punch" to the film narrative.

Getting an overhead closeup. Director of Photography Leon Shamroy, A. S. C., directly behind camera in dark suit, making final checkup for scene of Betty Grable in "The Shocking Miss Pilgrim," a 20th-Fox production.

The theory behind the *fluid* camera is a simple one. The camera is the "eye" of the audience, and the spectator sees only as much of the action as the camera sees. But if the spectator were actually present in the situation depicted upon the screen, he would not just stand in one place and restrain his eye from moving about in an effort to follow the action. Rather, he would move around—drawing closer to view this or that bit of action, drawing back to get a better view of the overall situation. The camera, as his cinematic eye, has a right to follow the same course of movement—drawing in, pulling back, narrowing down to some significant segment of the scene. It is as natural for the camera to move as it is for a character in the scene to move about the set.

A sound psychology underlies the use of the mobile camera. Movement purely for the sake of movement is an abuse of an otherwise forceful technique. The intelligent director or cinematographer moves the camera only when the demands of the filmic situation motivate that movement. Correctly used, the mobile camera produces a fluid continuity—a smoothly-flowing interplay of changing compositions within the individual scene. These compositions change and vary from extreme long shots to extreme close-ups without the harshness of a direct cut. Thus the audience's attention is held without mechanical interruption to the subject-matter of the scene.

There are several types of camera movement, and each device has come to be known by a specific name. The *follow shot* is one of the most common techniques and, as the name implies, it is used to follow the action of one or more characters within the scene. Usually this is accomplished by a simple *tilt* or *pan* or a combination of the two. Frequently, however, it becomes necessary for the camera to follow a player over a wide stretch of terrain. When this is the case, the camera is mounted on a *dolly* or camera *boom* and we have what is known

(Continued on Page 102)

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A Positive Vari-Focal View Finder For Motion Picture Cameras

By FRANK G. BACK

The author, Frank G. Back, M.E., Sc.D., is associated with the Research and Development Laboratory, New York.

Presented at recent Technical Conference of Society of Motion Picture Engineers, and published in December, 1945 issue of SMPE Journal. Reprinted by special permission.

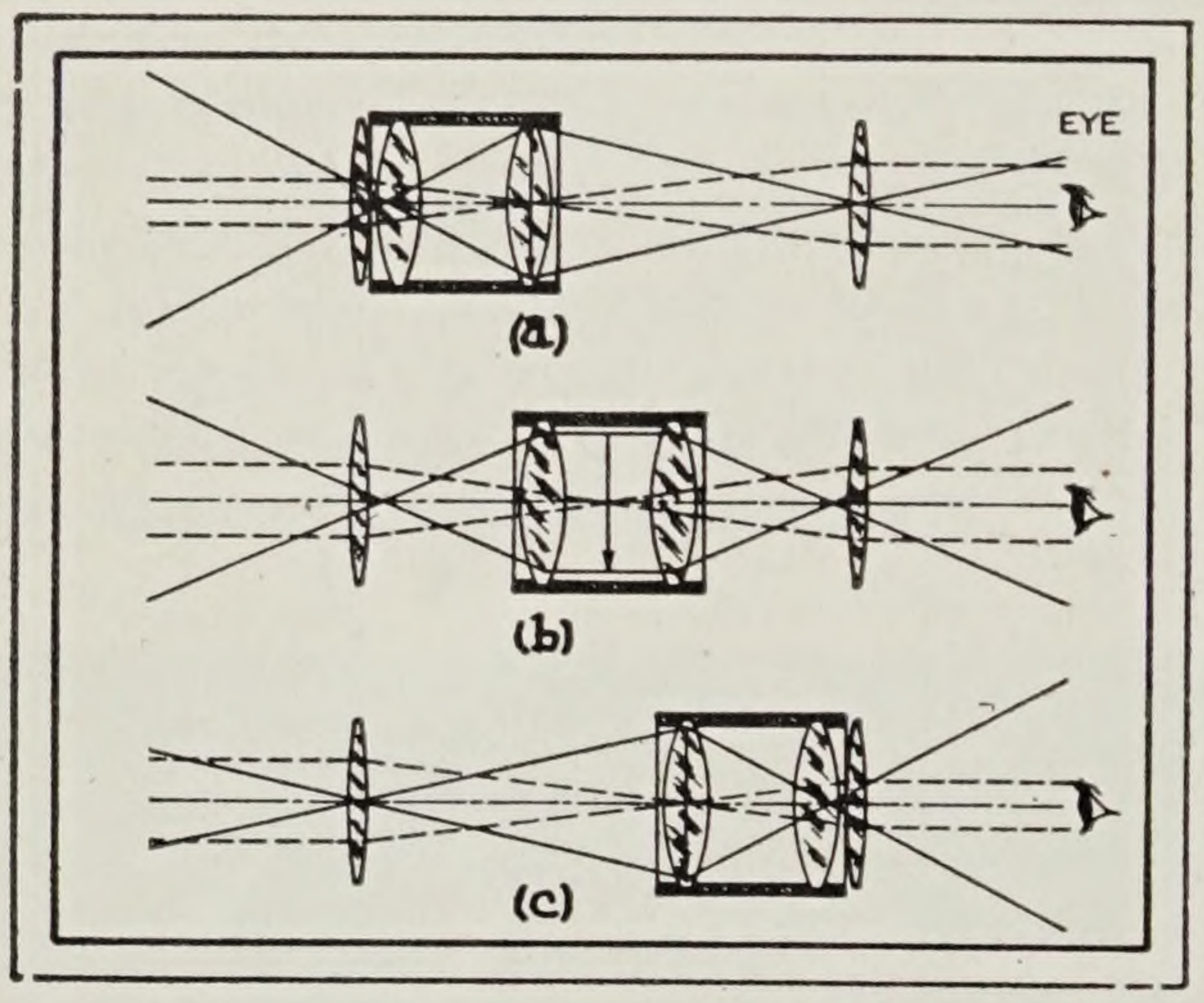

Fig. 1

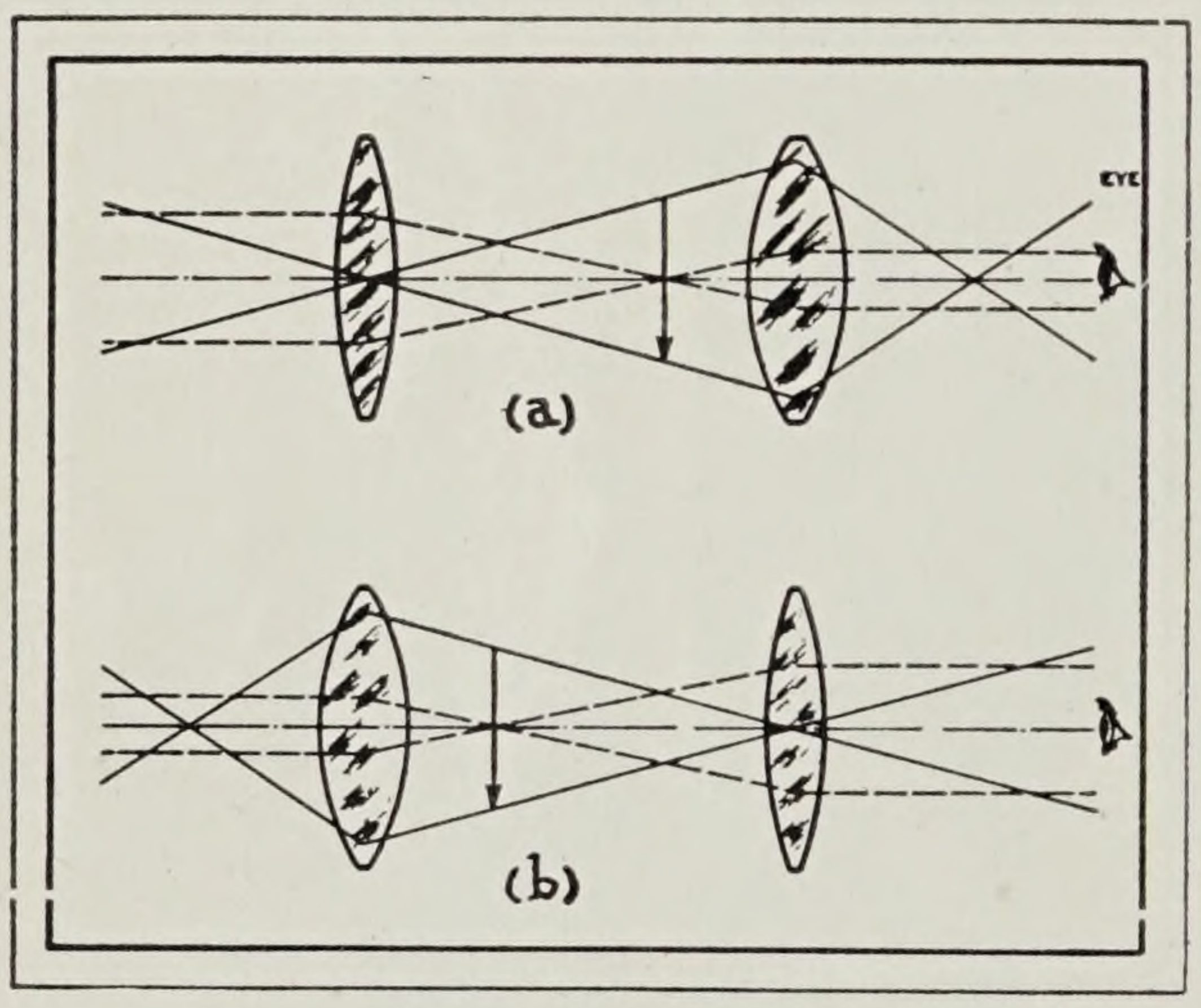

Fig. 2.

A new positive vari-focal view-finder for motion picture cameras eliminates the disadvantages of the two classes of finders now in use. The new view-finder uses only positive elements, thereby producing an upright real image. And it is possible to secure this real image in a frame of constant size. The image becomes variable over a wide range along a smooth and continuous curve instead of by intermittent steps as in the case in some other types of finders.

The two classes of finders presently used secure images by two different methods. One limits the fields of different camera lenses by mechanically changing the size of the frame which surrounds the image. The second class changes the field by optical means.

In the first class, we see that the image frame gets smaller as the focal length of the camera objective increases. The disadvantages of this are apparent. Those finders of the second class which change the field optically do one of two things: they change the frame size, as in the first class, or they produce only virtual images which do not frame distinctly. Negative-type finders, as described, also have large parallactic error. This is particularly true when the eye is displaced. One other type of view-finder having a turrethead might be mentioned here. Its evident disadvantage lies in the limitations placed upon it by the number of optical elements in its turrethead.

The vari-focal system of the new positive view-finder is based, of course, on the principle of the astronomical telescope. The finder adds to this principle certain other features which give it decided advantages. In the astronomical telescope, magnification is determined by the ratio of the focal length of the front lens combination to the focal length of the rear-lens combination.

Thus, a long focus front lens combined with a short focus rear lens gives us magnification. Fig. 1 (a) illustrates this clearly. Conversely, a short focus front lens coupled with a long focus rear lens brings about reduction, as seen in Fig. 1 (b).

The new positive view-finder uses a front lens and a rear lens of approximately equal focal length. The front and rear lenses do not move and are known as "stationary lenses." The variation is obtained by two lenses of shorter focal length mounted in a barrel with the view-finder housing between the two stationary lenses. These two shorter focus or "variator lenses" can be moved forward and backward from the front stationary lens to the rear lens. The movable barrel in which they are mounted is called the "variator."

This is how the variator operates: The stationary, and variator lenses are computed in such a way that when the variator is in the extreme front position, the combined power of the stationary front lens and the first variator lens is such that the inverted real image produced by them falls on the second variator lens. Fig. 2 (a) shows this. Thus the second variator lens acts as a field lens in this position and does not participate in the forming of the image. So far, the vari-focal system acts as a telescope that has a short focus objective and a longer focus rear lens, producing a reduced image covering a wide-field angle, as with a wide-angle lens.

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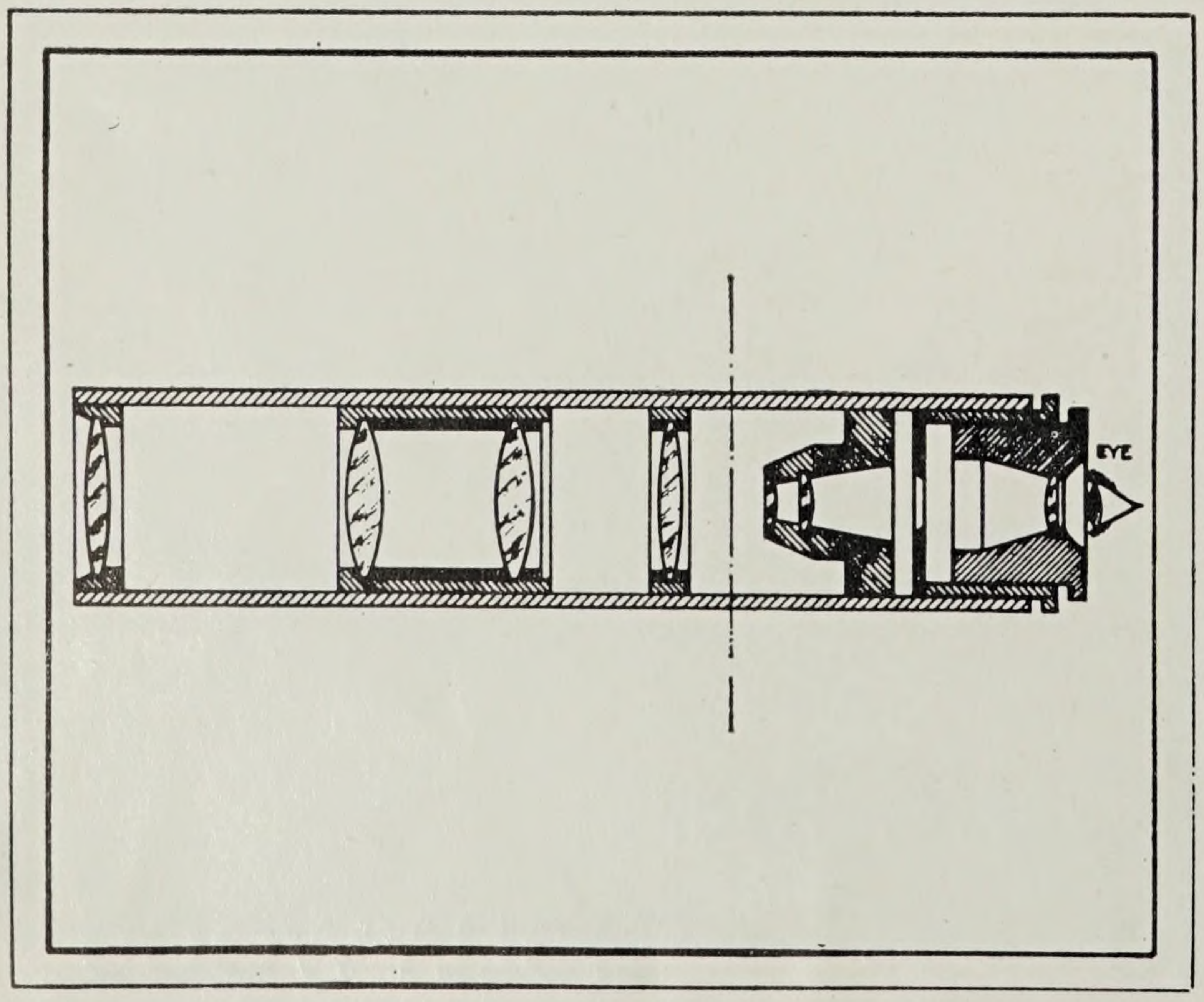


Fig. 3.

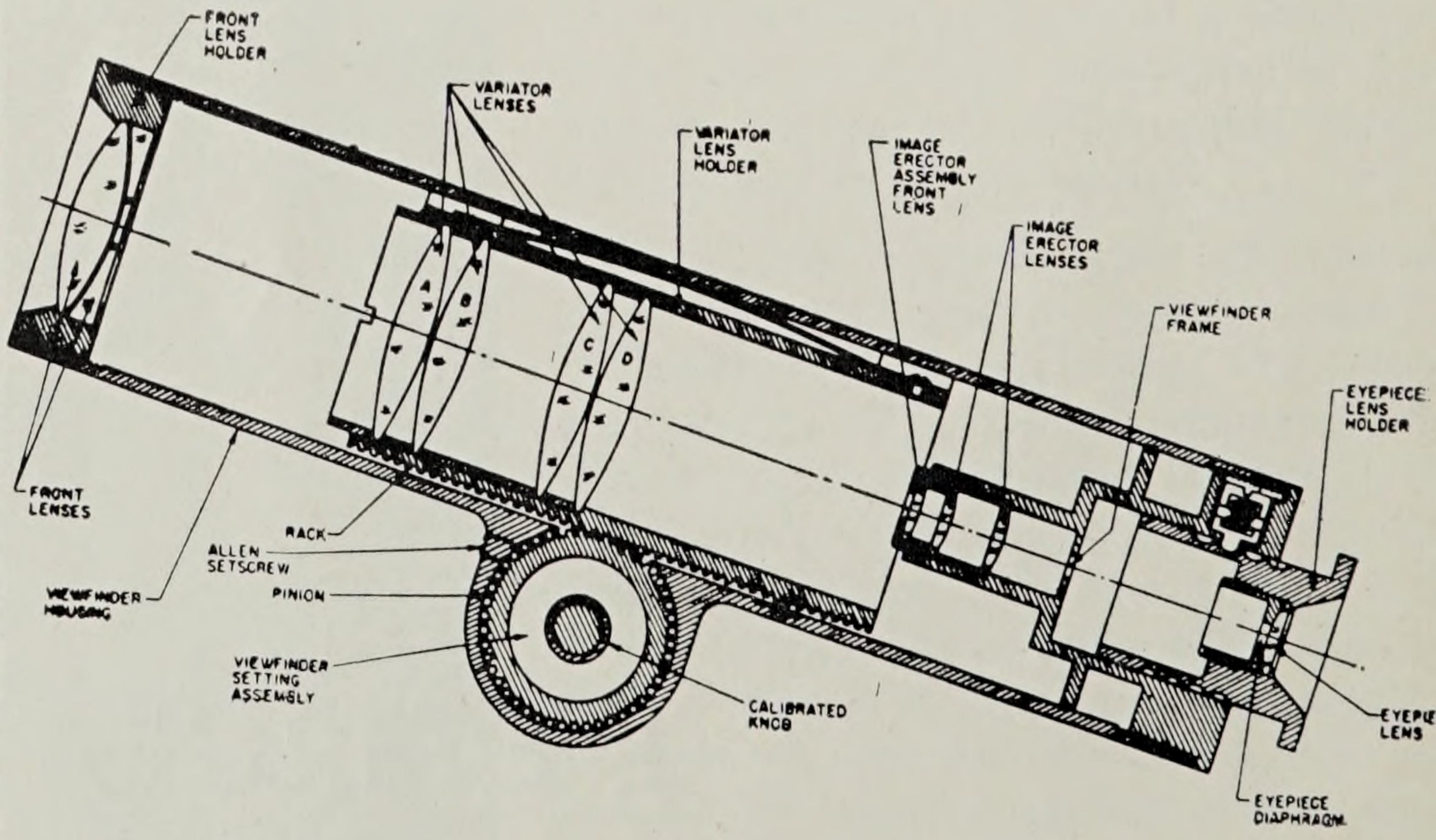
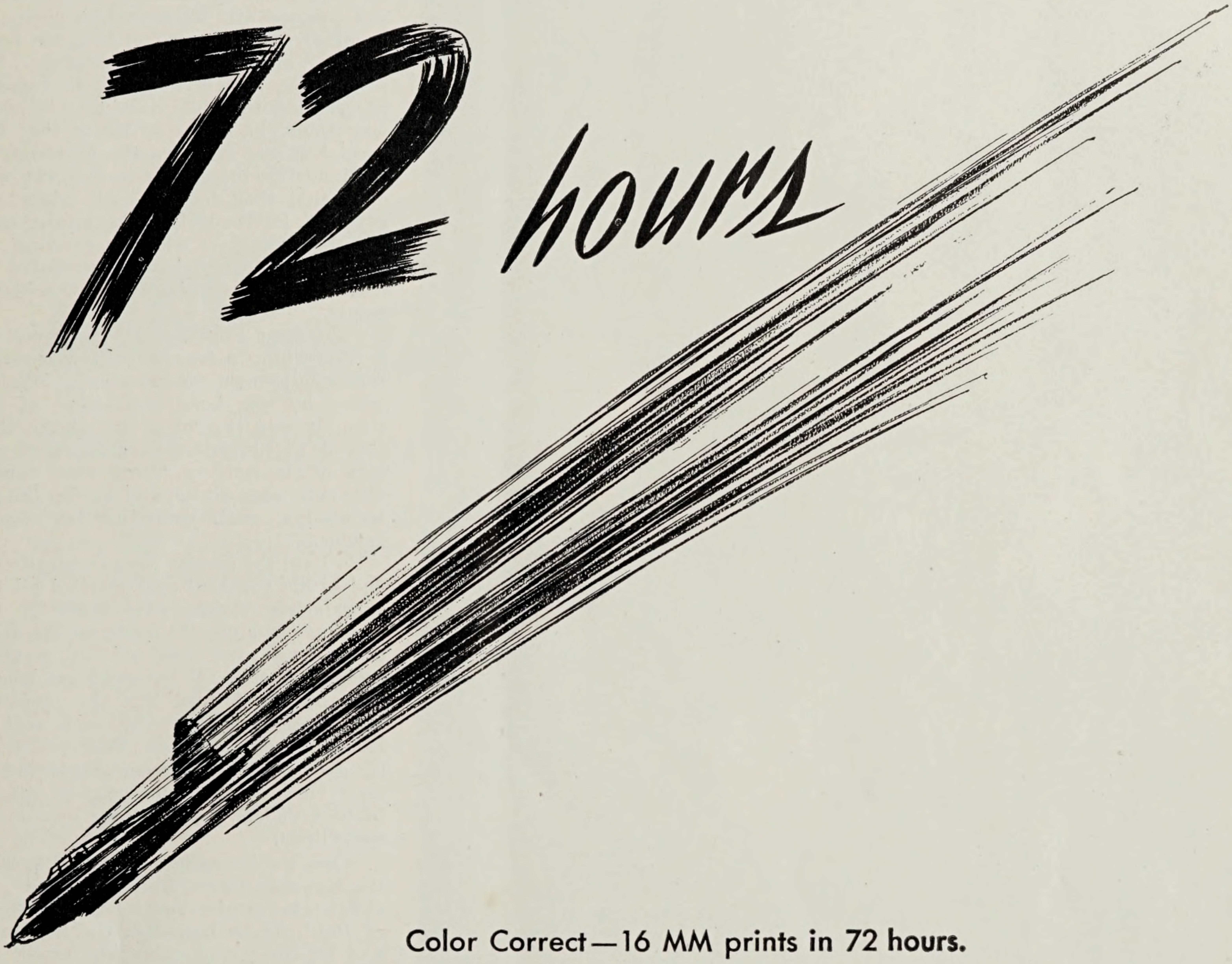


Fig. 4.

72 hours



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ACES of the CAMERA

Paul Eagler, A. S. C.

By W. G. C. BOSCO

KISMET, as the sage said, or should have said even if he didn't, is a wonderful thing. Who would have thought f'rinstance, that because tailors once used a rubberized adhesive tape to hold up the cuffs on men's trousers, that it would have an influence either directly or indirectly on the future of the film industry. And yet, so intricately are the skeins of fortune woven, that such was the case.

You see, the subject of our little biography this month, Paul Eagler, A.S.C., had a father who was a tailor; and in the year 1900 he not only gave Paul a magnificent magic lantern, he also brought him home the paper strips in which the above mentioned rubberized tape came wrapped.

Now the paper from this tape was, oddly enough, about 35mm. in width and came wound on spools in lengths of approximately 100 feet. And young Paul, who tired very quickly of the static quality of his magic lantern pictures, found out that he could simulate movement by cutting progressive pictures on this paper tape and jerking it through his magic lantern. The results, alas, were not what you might call completely satisfactory, but Paul was very young at the time, easily pleased, and so ecstatically happy over the results that it provided an avenue for his youthful inventiveness and subsequently influenced his choice of a career. And so we feel that we have proven, even though laboriously, the proposition set forth in the first paragraph; because while there may be some who would be loathe to admit that the special effects men are the backbone of the industry, there must be few who will deny that they form a most important vertebra. Particularly is this true of men like Paul Eagler, who, in growing up with the industry, have contributed so much to its spectacular technical achievements.

Soon after Paul's original attempt at movie-making a traveling show came to the small town of Newman, Illinois, where he was born and living at the time. It was typical of the shows that played to hinterland audiences at the turn of the century. There were vaudeville acts, song-slides, and during the intermission, real, genuine two-minute movies.

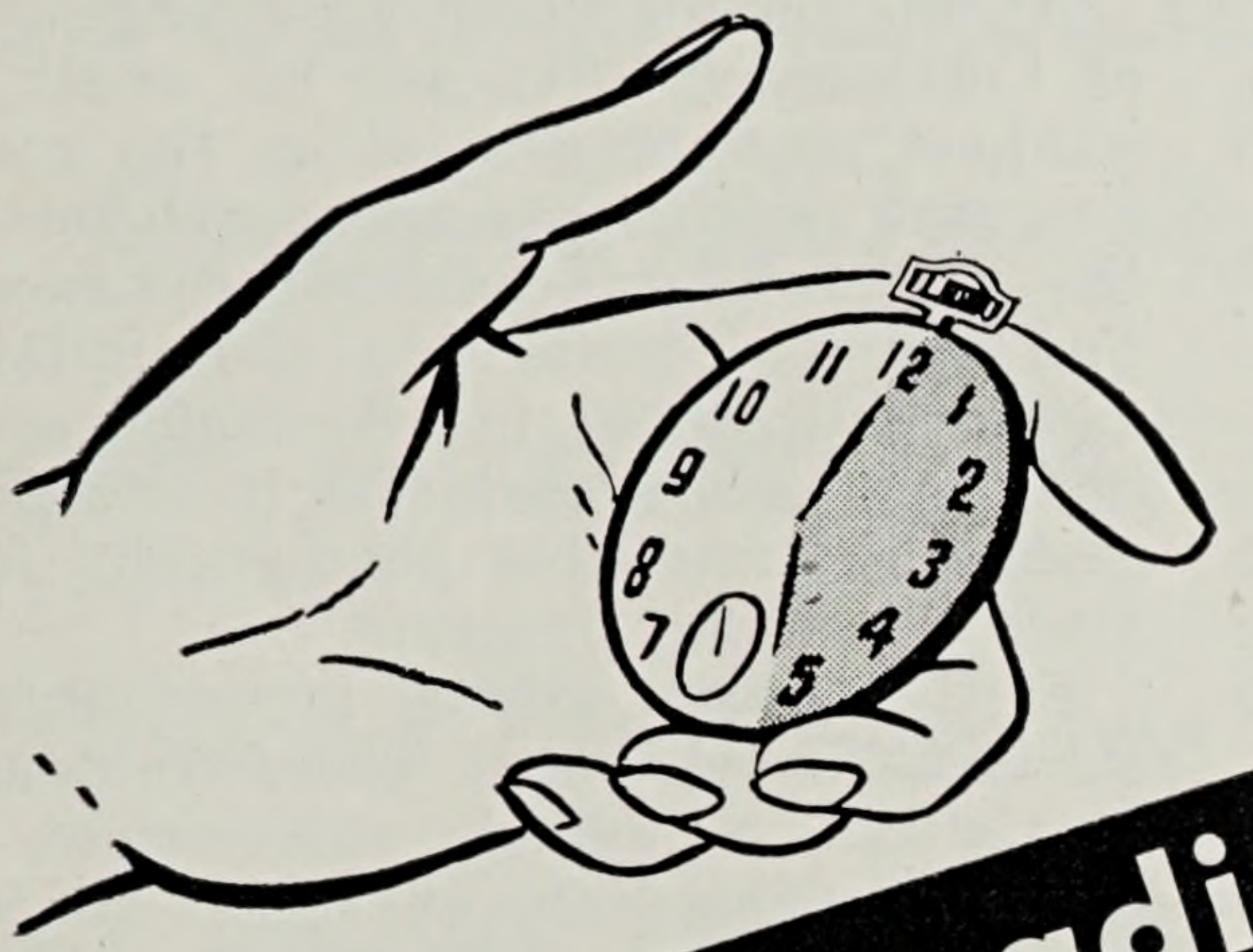
To Paul the movies were inspirational, and in his youthful eyes merited all the superlatives claimed for them in the lurid advertising. He made up his mind to find out what was in that portable asbestos booth. All he could get was a look, but he decided that the projector was a magic-lantern with some sort of hand-cranked clockwork. That was when the good people of Newman began to hide their clocks, and Paul's original magic-lantern underwent numerous drastic remodellings.

When the traveling show came back to the Newman Opera House the manager-ticket taker-projectionist couldn't get rid of Paul. So he bowed to the inevitable and let the young enthusiast crank the projector.

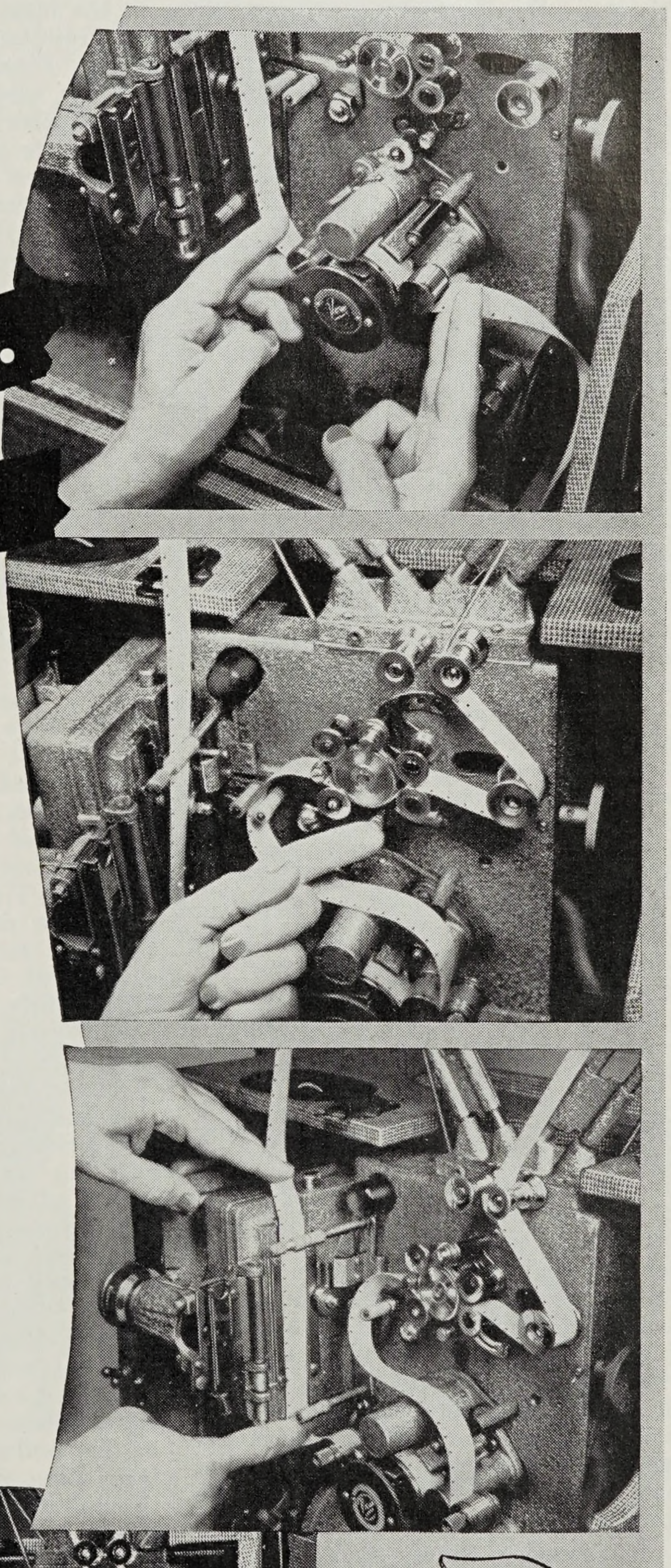
Thus, at the age of eleven, he made his debut as a projectionist. He was told that when he came to the finale, 25 feet of hand-tinted American flag floating proudly in the breeze, he must crank through, then crank it back, and then crank it back again; making seventy-five feet of film in all, and assuring a thunderous applause for the finish. That this feat could be accomplished seemed impossible to Paul. But the projectionist quickly reassured him. "A flag floating in the breeze," he said, "is a flag floating in the breeze. No matter which way you crank it." And sure enough, Paul found that the man was right. It was his first intimation of what could be perpetrated on a gullible public with the aid of a camera and a projector.

By 1905 Paul was a showman in his own right, with what was perhaps one of the first store-shows in the State of Illinois. The occasion was a lusty, 4th of July celebration which the citizens of Newman made to last three days; and the vehicle our youthful impressario used to gather in the nickels from his fellow

(Continued on Page 104)



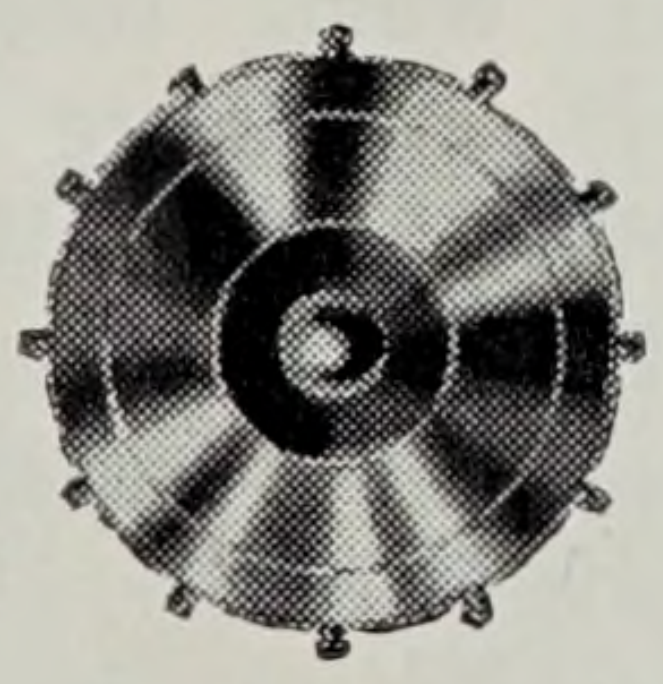
film threading time . . . 27 seconds



THANKS TO VICTOR'S GREATER FINGER ROOM

Over the sound drum . . . under the large sprocket . . . into the easily accessible film channel—these are the simple highlights of threading a Victor. Yes, fingers—young and old—quickly learn this easy lacing. The reason is . . . simplicity . . . more finger room.

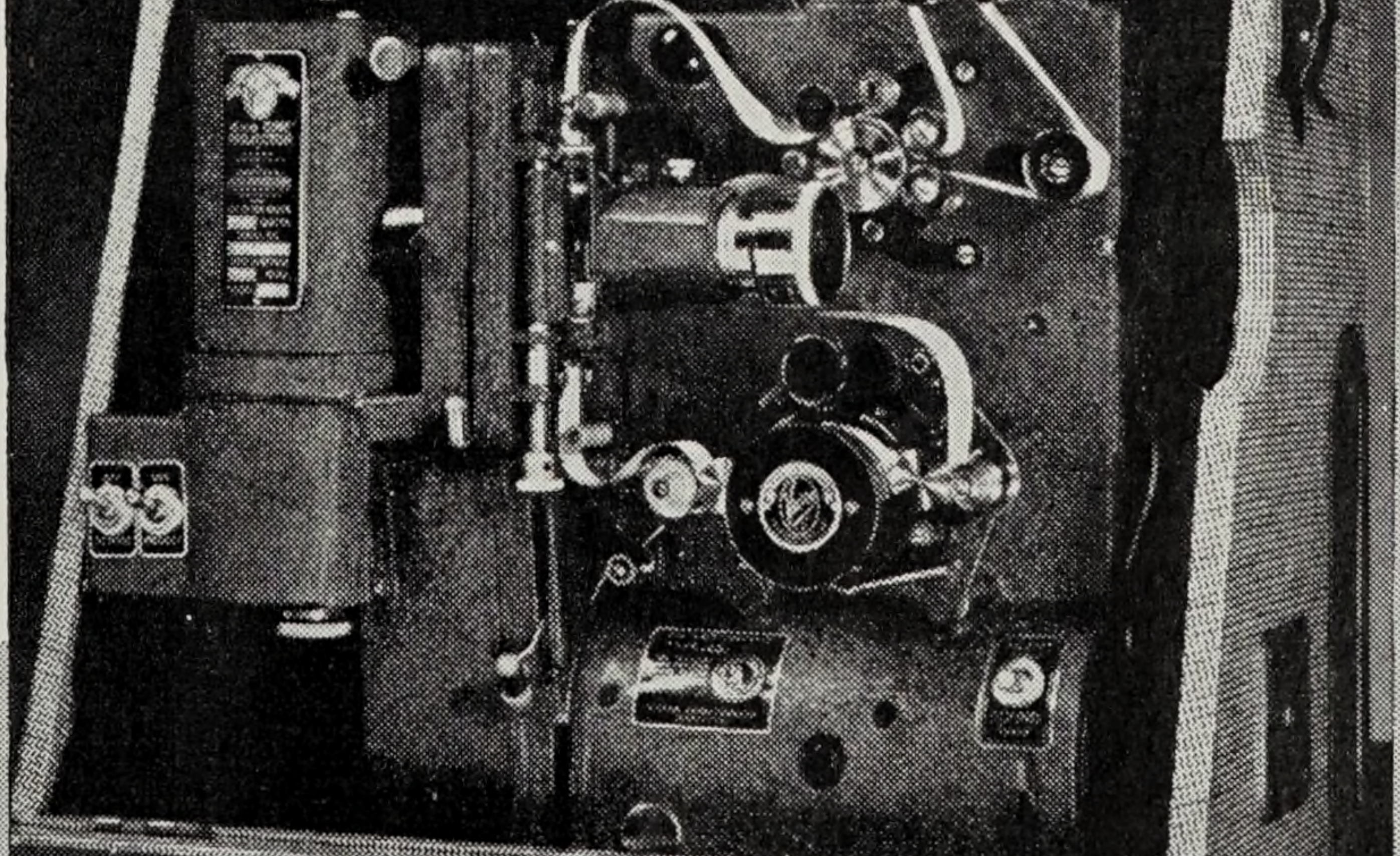
Such exclusive Victor features as 180 degree Swing-Out Lens Mount, Duo-Flexo Pawls, Spira-Draft Lamp House, and Safety Film Trips give greatest protection to valuable films. Both new and experienced operators prefer this extra security and trouble-free operation. Yes, your films are safer—as well as being brilliantly projected—with a Victor.



Check this Victor Oversize Sprocket. Note the greater film surface . . . five teeth engage the film (instead of three as in ordinary projectors).

SIGHT • SOUND • SEQUENCE

VICTOR REG.U.S. PAT.OFF. 16 MM



The
ANIMATOPHONE
16mm Sound
Projector

VICTOR ANIMATOGRAPH CORPORATION
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New York (18) McGraw-Hill Building, 330 West 42nd Street • Chicago (1) 188 West Randolph
MAKERS OF 16MM EQUIPMENT SINCE 1923

Filming Rockets

(Continued from Page 81)

be pointed out, in order to provide time information, the dial of the cameraman's stopwatch was registered at the end of each high speed shot to provide the scientists with exact timing when the film was studied in detail.

Many Rocket Weapons Developed

The scientists and photographic unit were concerned with many types of rocket weapons under development for various uses in offensive campaigns. Each development followed a set procedure and program. Initial test was on the ground from a stationary launching site, with missile aimed at target area 1,500 to 2,500 yards distant. Although the scientists and military observers were stationed behind concrete shields a safe distance of one-half mile from the range, it was necessary for members of the camera crew to get within 500 yards—operating in the open with long focal length lenses of four and six inches. General procedure was to set one cameraman directly opposite the launching site, a second mid-distant between the launcher and target area, and the third opposite the intended target area.

With the rocket projectiles travelling anywhere from 600 to 1,500 feet per second, the cameramen could not use tripods, but each panned the entire line of flight with hand-held cameras. The men became so expert in the work that they seldom missed following throughout the trajectory from the time of launching till target was struck; thereby gaining invaluable ballistic data.

In the early stages of experiments with new rockets, higher-powered propellant powders, and fuses, both the scientists and cameramen were placed in most hazardous and dangerous situations. They had to be alert for anything to happen. Premature detonation of experimental fuses would shower hot and jagged fragments of steel in all directions, and on one occasion, the magazine was knocked off a camera by flying steel. Miraculous escapes were the rule rather than the exception.

Stressing Safety Factors

Safety of the operators of the missile launchers, either from amphibious craft or airplanes, was of major importance in the tests and developments. After the initial ground tests, a stationary plane wing was set up with launching bracket attached. Exhaustive tests were then made to study—through the films—the stress and strain of the launching shock when the rocket was sent on its way. After insuring stability of the plane wing, next step was launching from a regular plane placed on a wooden ramp with tail lifted into flying position; motor turned over at normal speed; without pilot or mechanic aboard; and rocket fired via remote control. At this point, three cameras—turning at normal, 64 pictures per second and 128 pictures per second—were employed. Resulting film provided the scientists with details on the blast effect and shock waves of the projected rocket on a plane in flight.

Final Tests from Plane

After assurance of the uniformity of a particular type rocket in performance, final tests in firing from a plane in flight were instituted. Cameras photographed launchings from an accompanying plane 10,000 feet in the air—generally over a desert range. This provided further information for the scientists before green light was given for final tests where the rocket-launching plane flew in at low levels at indicated ground targets.

Virtually the same procedure was followed in all phases of rocket development, which covered also launchings from the ground, surface craft, submarines, etc. Many types were developed and designed for special purposes.

Films to Chiefs of Staff

When the specific rocket and launching device for either air, ground, or sea use was felt ready, a concise film on the type was edited to show pertinent points in the development, handling, and effectiveness of the final tests. These films, on account of the urgency and need of rocket weapons in warfare, told the entire story with a minimum of titles. Time was not wasted on recording a descriptive dialogued soundtrack, as such a procedure would consume most valuable time through extra processing.

Each film, as completed, was sent to Washington for viewing, and the visual reports on intimate phases of the action and performance of each particular rocket missile vitally speeded up adoption and utilization in the field. Prints of each subject were then sent (as top secret material) to air, ground, naval and other forces for viewing by commands to ascertain adaptibility in their individual campaigns.

From these short and concise films on each specific rocket development, officers and commands charged with making decisions in the field were able to better evaluate the combat and military value of the weapon depicted than through the previous procedure of providing them with long and lengthy written reports which previously had been highly technical and consumed much time of the top command to read and evaluate. The visual reports were far easier for military strategists to evaluate for combat use, with consequential speedier installation in warfare.

By August, 1944, total of 77 reels on rocket weapons and projectiles made by Commander Gilks and his camera unit, were in the library of National Development Research Council for loans to Navy, Army, and Marine strategists and officers. The subjects, in addition, served as most valuable training and instructional films for officers and personnel on each type of rocket weapon in the early introduction of the latter on various battle fronts before specific training films of handling and operation could be turned out. In numerous cases, the test and development film subjects served for training and indoctrination of officers and men of the armed services.

Commendation on Film Project

As the photographic accomplishments of Commander Gilks and his small but compact crew progressed on the rocket program experiments and developments, the unit received continual commendation for its results and the initiative and inventitiveness in overcoming seemingly impossible obstacles in achieving seemingly impossible photography in a most vital war program.

E. C. Watson, official investigator of National Development Research Council at Caltech, completely summarized the entire film program on rocket projects with a report to Washington which stated;

"Such films are of particular value during the early stages of the development of a new weapon when its tactical uses and its characteristics are still being explored, and when no nucleus of personnel familiar with the weapon is available.

"The Films are used constantly to acquaint visiting scientists, and Army and Navy officers, with the nature of these new developments. They also resulted in a great saving of time and expense to us and to our increasing number of military visitors, as it was unnecessary to stage special demonstrations for them with consequent loss of time.

"The films are of definite scientific and technical value, being particularly useful in study of blast effects on launchers and of launchers reactions, in fuse, fragmentation and explosion tests, and in tests of flash effects."

Later, Watson advised General Donovan: "filming of field and range tests, are not only valuable in the research and development work itself, but of especial value in bringing about the acceptance of rockets by the fighting services, in getting them into combat use promptly, and in training military personnel in their use."

Special commendation in 1945 was issued by the Chief of Naval Operations for "the valuable color film made by the photographic unit under Commander Gilks." A State Department representative wrote Commander Gilks, "I know only too well what incredible results you have obtained in filming rocket projectiles."

Praise for Unit

Commander Gilks, in disclosing the film activities in the rocket projectile program during the war, lays particular stress on the success of the assignment to the members of his unit. He mentions the late Jack MacKenzie, jr., chief photographers' mate; the late Edwin Roach, photographers' mate both of whom were killed last year in an auto accident returning from a particularly dangerous flying mission; and photographer, first class, Herb Wolf, who was injured in the same crash. He also points out the important contributions in the project of chief photographer,

(Continued on Page 101)

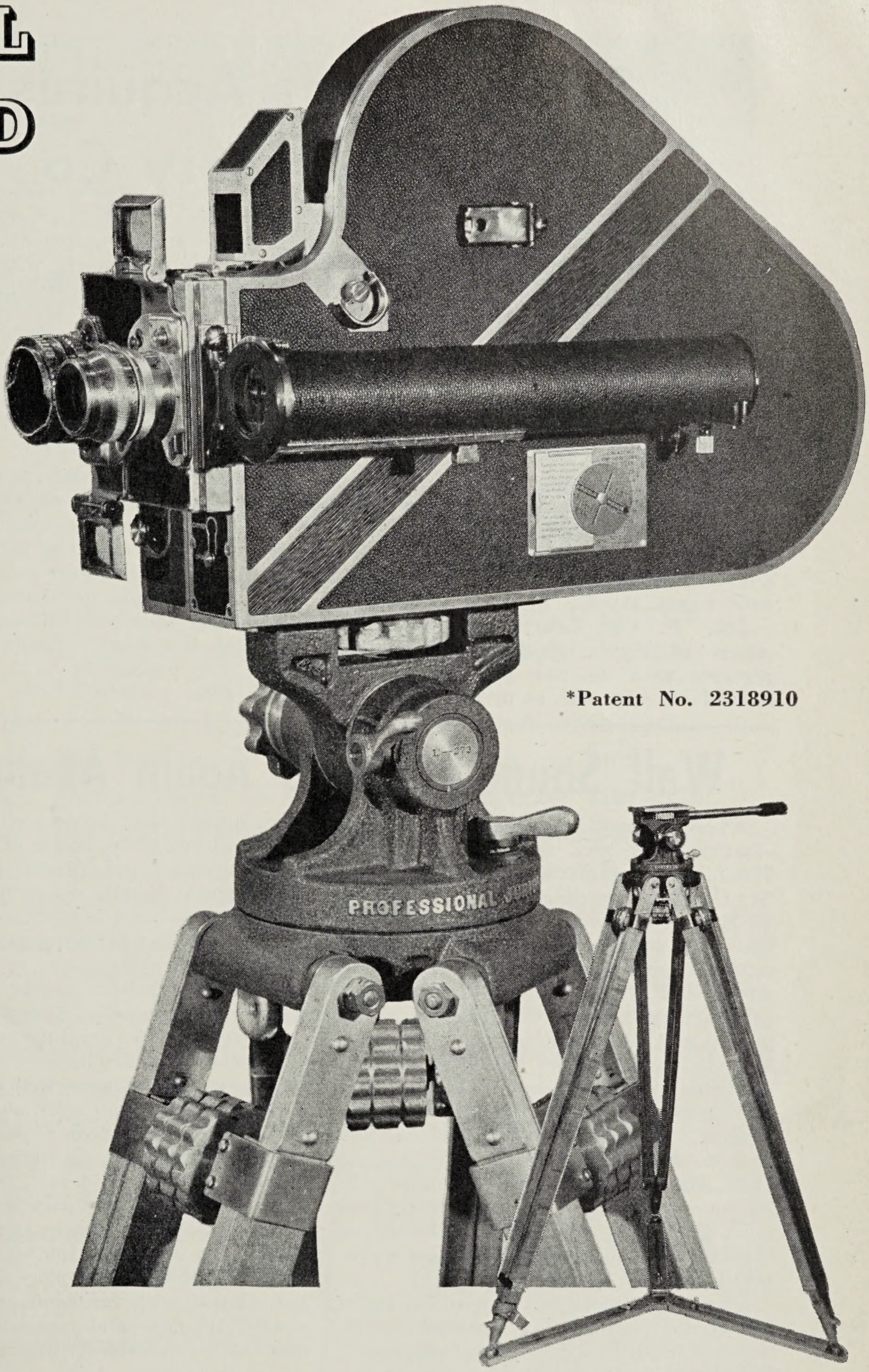
"PROFESSIONAL JUNIOR"* TRIPOD

with Removable Head Now Available!

Acclaimed the finest for every picture taking use.

The friction type head which is unconditionally guaranteed for 5 years, gives super-smooth 360° pan and 80° tilt action. It is removable, can be easily mounted on our "Hi-Hat" low-base adaptor or Baby "Professional Junior" Tripod base. The large pin and trunnion assures long, dependable service. A "T" level is attached. The top-plate can be set for 16mm. E. K. Cine Special, with or without motor; 35mm. DeVry and B & H Eyemo (with motor), and with or without alignment gauge.

The standard size tripod base is sturdy. "Spread-leg" design affords utmost rigidity and quick, positive height adjustments. Complete tripod weighs 14 lbs. Low height, at normal leg spread, 42". Extended height 72". All workmanship and materials are the finest.



*Patent No. 2318910

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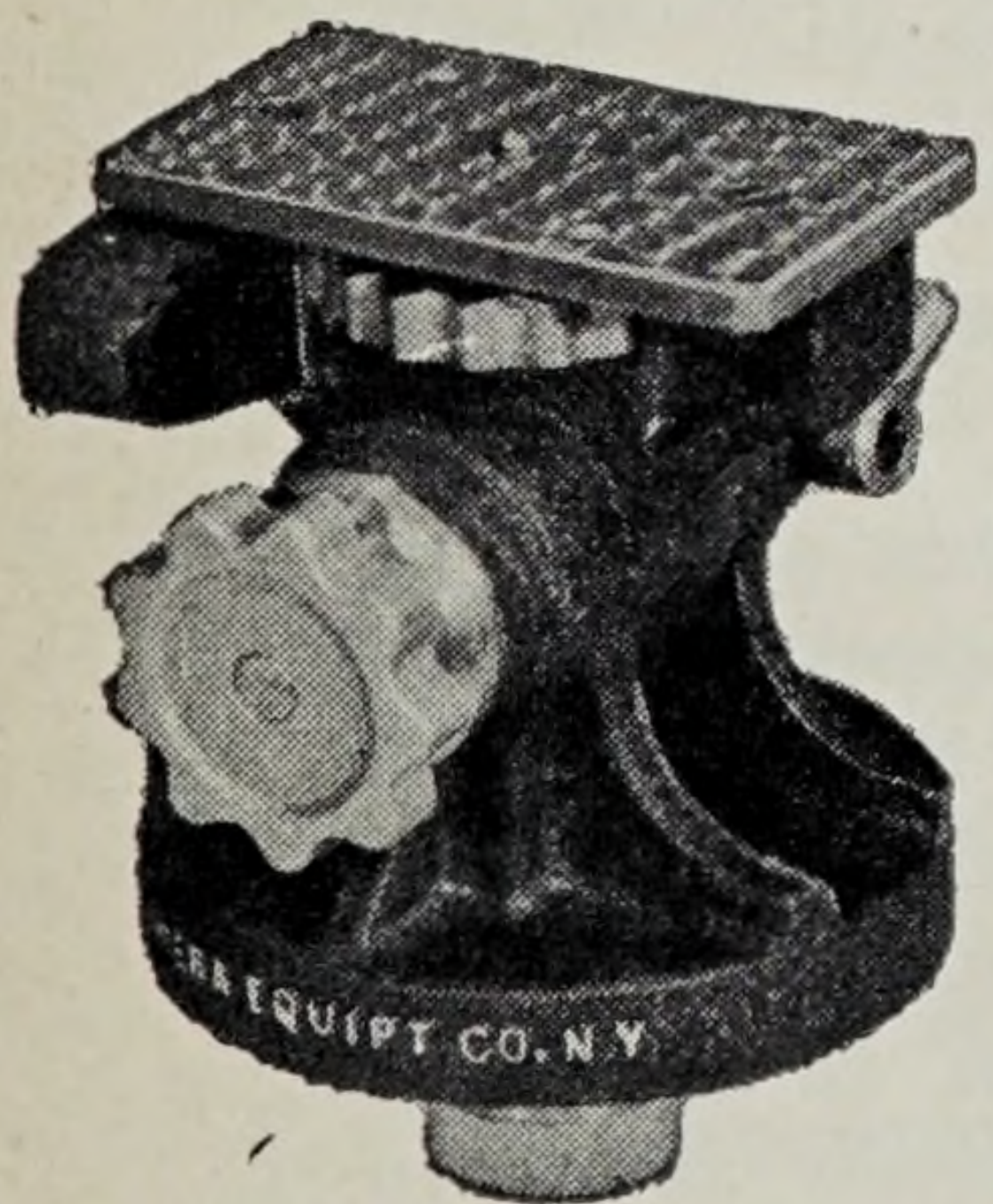

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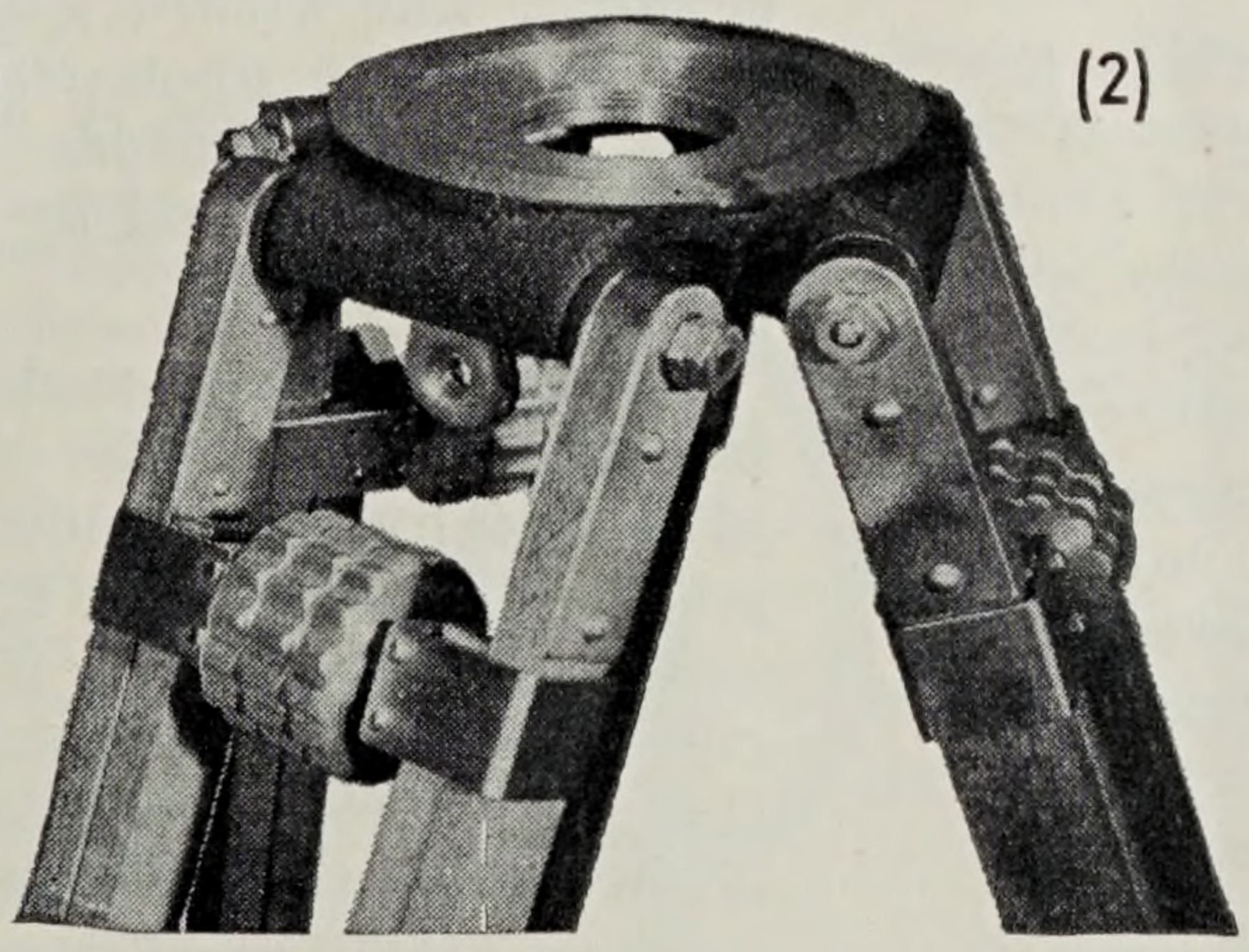

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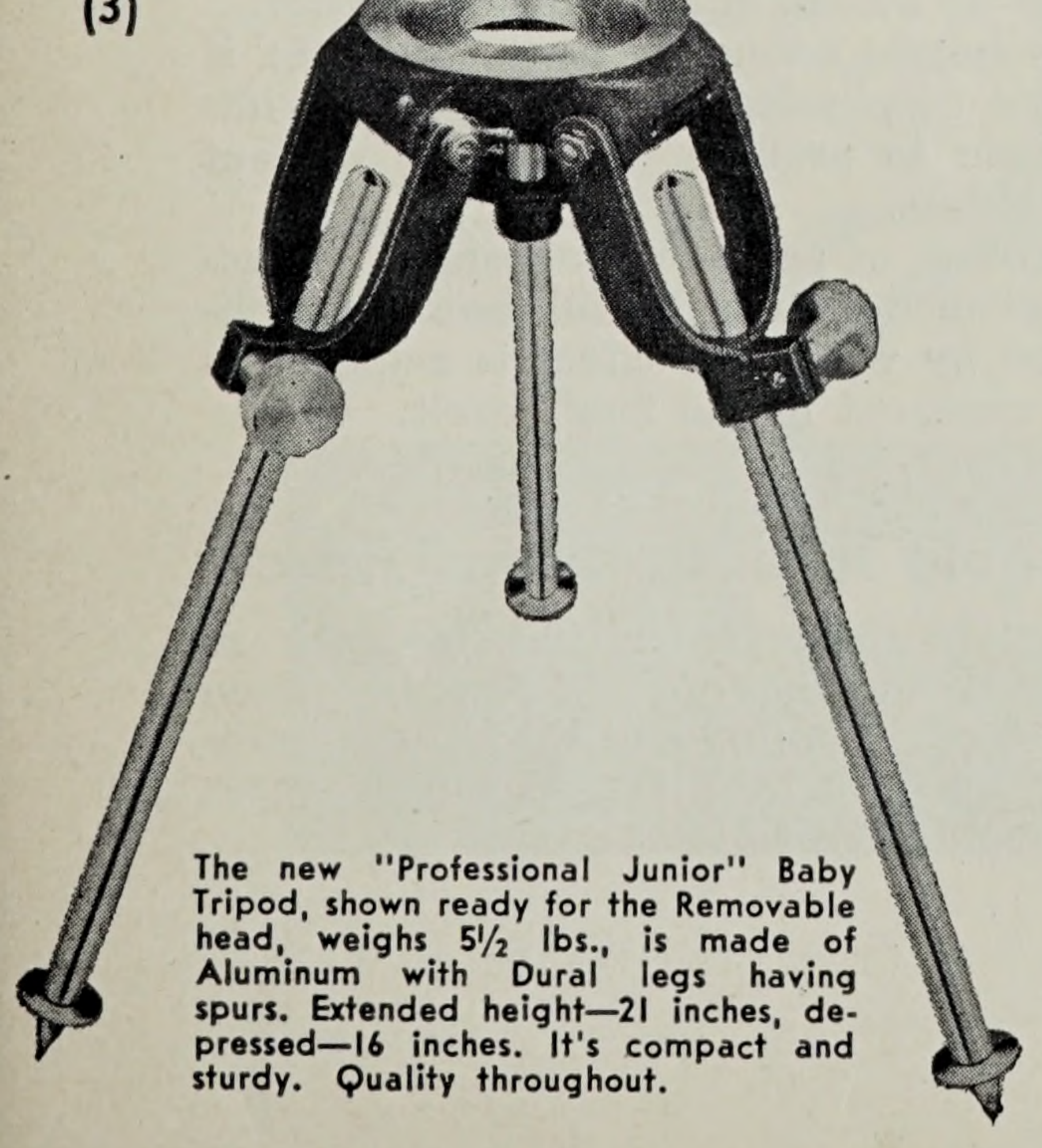
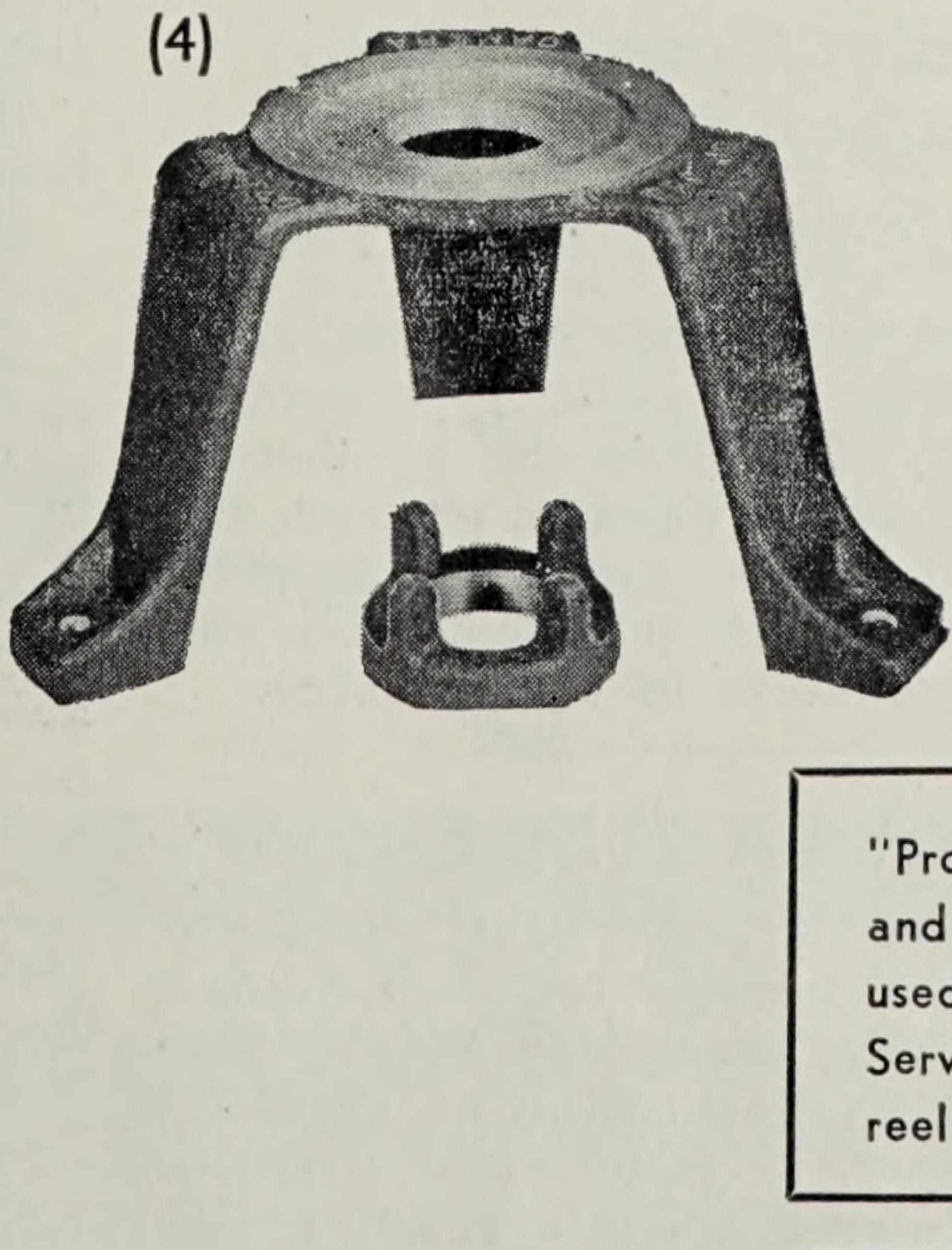


The new "Professional Junior" Baby Tripod, shown ready for the Removable head, weighs 5½ lbs., is made of Aluminum with Dural legs having spurs. Extended height—21 inches, depressed—16 inches. It's compact and sturdy. Quality throughout.

(4)



Adaptability: here are illustrated (1) the friction type removable "Professional Junior" tripod head that may be affixed to (2) the Standard Tripod Legs Base and (3) the new all-metal "Baby" tripod and (4) the "Hi-Hat" by simply fastening the finger-grip head fastening nut that is shown under it. Note the positive-locking, fluted, height-adjustment knobs and tie-down rings of the Standard Tripod Base which is standing on a Triangle.

Now Available to Camera Owners and Dealers

"Professional Junior"* Tripods, Baby Tripods, Developing Kits, "Hi-Hats" and Shiftover Alignment Gauges made by Camera Equipment Co. are used by the U. S. Navy, Army Air Bases, Signal Corps, Office of Strategic Services and other Government Agencies—also by many leading Newsreel companies and 16mm. and 35mm. motion picture producers.

FRANK C. ZUCKER
CAMERA EQUIPMENT CO.
1600 BROADWAY NEW YORK CITY

Solar Aircraft Acquires Fonda Machinery Co.

Patent and manufacturing rights on film processing equipment and developing machines previously turned out by Fonda Machinery Co., has been acquired by Solar Aircraft Company. The latter, which produced highly-precisioned parts and accessories for airplanes during the war, has factory space, skilled machinists and toolmakers, and necessary machinery to greatly increase the output of Fonda film developing equipment.

Fonda Film Processing Equipment Division of Solar Aircraft Company has been set up, with sales and display headquarters at the former Fonda plant, 8460 Santa Monica Blvd., Los Angeles.

John F. Van Leuvren, original designer of Fonda developing machines, remains with the new company; while John Tuve continues as production manager of Fonda equipment for Solar. Clayton Wall, formerly with the Army Air Forces at Wright Field, is designing engineer.

William Prager, associated with the AAF photographic division during the war, becomes sales manager of the Fonda division of Solar. Prager is widely known in the film industry.

Acquisition by Solar eliminates the production bottleneck of Fonda, which was forced to limit output because of restricted manufacturing facilities. New deal provides factors for volume production of the Fonda developing machines to meet the widespread demand from all parts of the world. Fonda equipment allows for processing of both 35 and 16mm. film.

Wall Sound Cameras Again Available

Widely recognized as "the most successful news reel camera", the Wall 35mm. sound camera, manufactured by St. George Recording Equipment Corp. of New York, won new laurels during the war when eighty of these sound cameras were constantly in use by the Army and Navy without a single unsatisfactory report. Compact, light in weight and sturdy, these cameras proved easy to handle under the most difficult conditions of desert and jungle fighting and "stood up" under long, strenuous service. The Wall sound camera has been used for Fox Movietone films since 1928. The entire Wall outfit weighs only 37 pounds and is simple to operate. One man can easily operate both sound recording and photography. The sound system is battery operated.

The Wall camera can be used for regular studio photography, without sound, when desired. It is free from "blimping". Bausch & Lomb Baltar lenses are used. These have proved superior to any foreign lenses.

St. George Recording Equipment Corp. announces that it has a limited number of these Wall 35mm. sound cameras available for immediate shipment. Each outfit comprises the following:

Wall camera-single system sound—complete with Bausch & Lomb Baltar 50mm. f. 2.3 coated lenses, Bausch & Lomb Baltar 75mm. f. 2.3 coated lens, Bausch & Lomb Baltar 100mm. f. 2.3 coated lens, Bausch & Lomb Baltar 152mm. f. 2.7 coated lens, modulite galvanometer, camera case—carrying, camera accessory carrying case—consisting of 1 matte box, Bausch & Lomb Baltar 35mm. f. 2.3 coated lens, magazine belt tightener, six collapsible film spools, four bakelite film centers, 1000-ft. and one 400-ft. magazine leading hooks, filter holder container with nine double and three single filter holders. Oil can, pair pliers, screwdriver, bottle of camera lubricating oil—good for 80 below zero; tripod (pan) handle, crank handle, three camera belts—small, medium, large, amplifier, amplifier carrying case, amplifier accessory carrying cases, consisting of two camera power cables, two 50-ft. microphone extension cable, two galvanometer cables, two amplifier power cables, two sets of earphones, four exciter lamps, two microphones with cable, gooseneck and baffle, two microphone tripods, camera portable power pack shoulder carrying strap with six nonspillable storage batteries and 3-4 volt, 2-6 volt, 1-12 volt outlets, vibrator pack with six nonspillable storage batteries, magazine carrying case with two 1000-ft. magazines, baby tripod with carrying case and hyhat, tripod with freehead and boot and saddle, triangle and magazine carrying case with four 400-ft. magazines.

Telefilm Constructing Film Storage Vaults

Telefilm Studios of Hollywood has under construction a large air-conditioned, steel-reinforced concrete vault for film storage. In addition to providing space for the increasing number of 16mm. negatives of Telefilm product, the vaults will be made available for storage of films for other commercial and industrial producers in the industry.

"It's All Yours," by Steiner

William Steiner, A. S. C., recently completed photography on a ten-minute short, "It's All Yours," at the Willard Studios in New York. Reel, narrated by Ralph Bellamy, is designed to promote extra-curricular reading by high school students.

Best 1945 Cinematography

(Continued from Page 79)

Academy Award jointly with Ray Rennahan, A.S.C. previously for "Gone With the Wind."

George Barnes, who has nominations in both classes with Selznick's "Spellbound" in the black-and-white, and RKO's "The Spanish Main" in color, also previously won an Academy Award for photographic direction on "Rebecca." Tony Gaudio, in the color nominations this year with Columbia's "Song to Remember," was a previous Academy Award winner in cinematography for his splendid photographic work on Warners' "Anthony Adverse."

Final Selections

Selection of the photographic achievement to be designated for the Academy Award in Cinematography is made through vote of the Directors of Cinematography for one of the five nominated productions in both the black-and-white and color divisions. The production receiving the highest number of votes is adjudged the winner, with the Director of Photography individually responsible for the photography receiving the Academy Oscar; which is considered the highest recognition of motion picture photographic achievement for the year.

Recognition for Special Effects

Although the spotlight is on the directors of photography for their motion picture cinematography in the Academy Awards, the recognition of Special Effects for an Oscar cannot be discounted. The wizardry of the process and special effects photographers, who provide realistic illusions for the finished pictures which could be attained through no other means.

Because of the complexities of analyzing the final results of special effects photography, the Academy President appoints a committee of 15 technicians who are familiar with the intricacies of special effects photography in releases of the year. Final consideration narrows down to five productions, with committee making selection of the recipient of the Oscar winner from this quintette.

Basic requirements for judging of Special Effect achievements are:

Dramatic necessity of the effects, pictorial or sound, or both to the picture.

Economic necessity to the picture; it should be physically or economically impossible to produce the picture without the effects.

Illusion of actual reality should be accomplished with such skill that the mechanism by which the effect is achieved is not apparent in the final result.

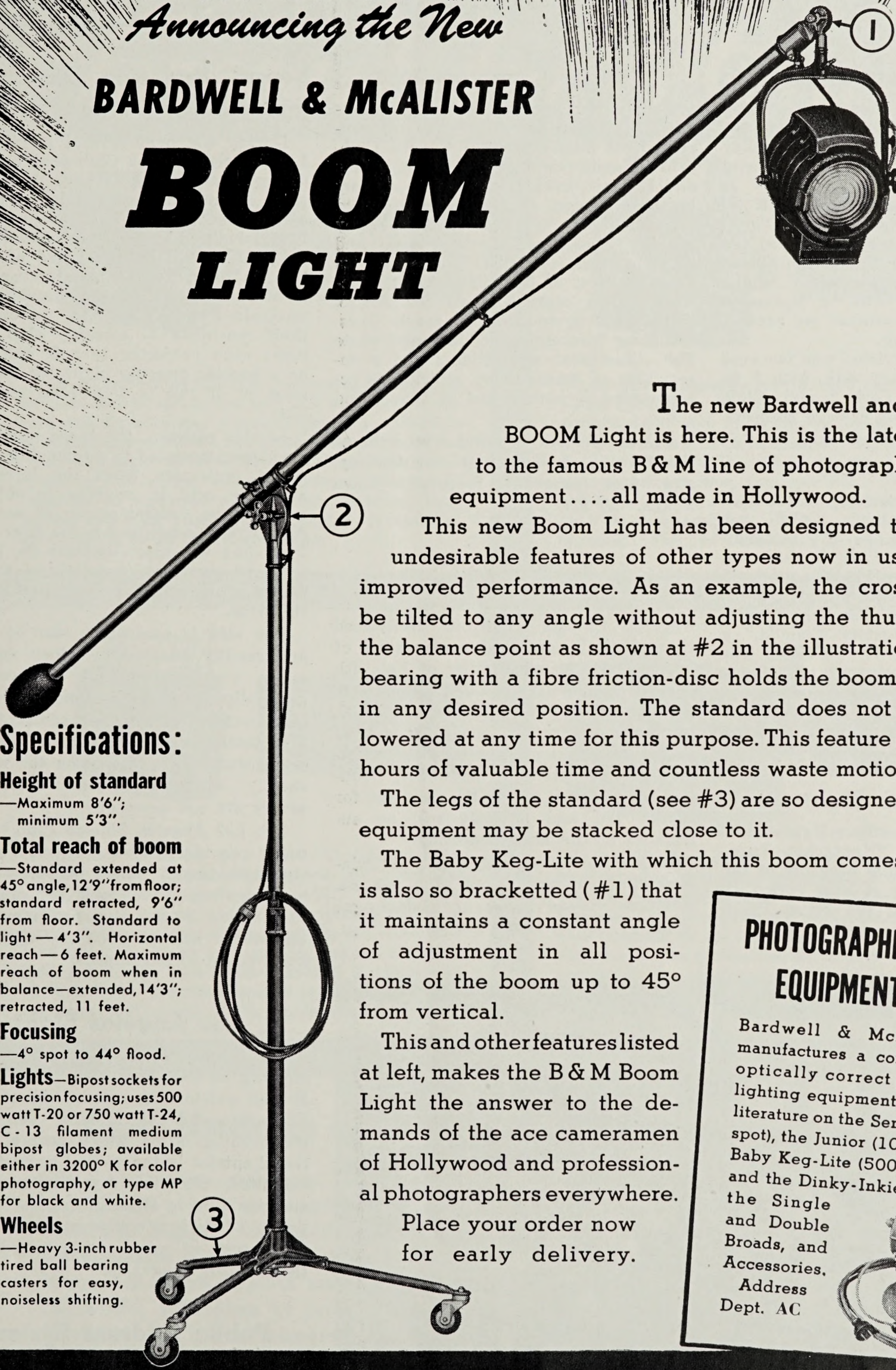
Echols Resigns From Ansco

G. Harrison Echols has resigned as general manager of the Ansco division of General Aniline and Film Corp., position he has held for the past three years.

Announcing the New

BARDWELL & McALISTER

BOOM LIGHT



The new Bardwell and McAlister BOOM Light is here. This is the latest addition to the famous B & M line of photographic lighting equipment.... all made in Hollywood.

This new Boom Light has been designed to eliminate undesirable features of other types now in use and give improved performance. As an example, the cross arm may be tilted to any angle without adjusting the thumbscrew at the balance point as shown at #2 in the illustration. A thrust bearing with a fibre friction-disc holds the boom motionless in any desired position. The standard does not need to be lowered at any time for this purpose. This feature alone saves hours of valuable time and countless waste motions.

The legs of the standard (see #3) are so designed that other equipment may be stacked close to it.

The Baby Keg-Lite with which this boom comes equipped, is also so bracketted (#1) that it maintains a constant angle of adjustment in all positions of the boom up to 45° from vertical.

This and other features listed at left, makes the B & M Boom Light the answer to the demands of the ace cameramen of Hollywood and professional photographers everywhere.

Place your order now for early delivery.

Specifications:

Height of standard —Maximum 8'6"; minimum 5'3".

Total reach of boom —Standard extended at 45° angle, 12'9" from floor; standard retracted, 9'6" from floor. Standard to light — 4'3". Horizontal reach — 6 feet. Maximum reach of boom when in balance—extended, 14'3"; retracted, 11 feet.

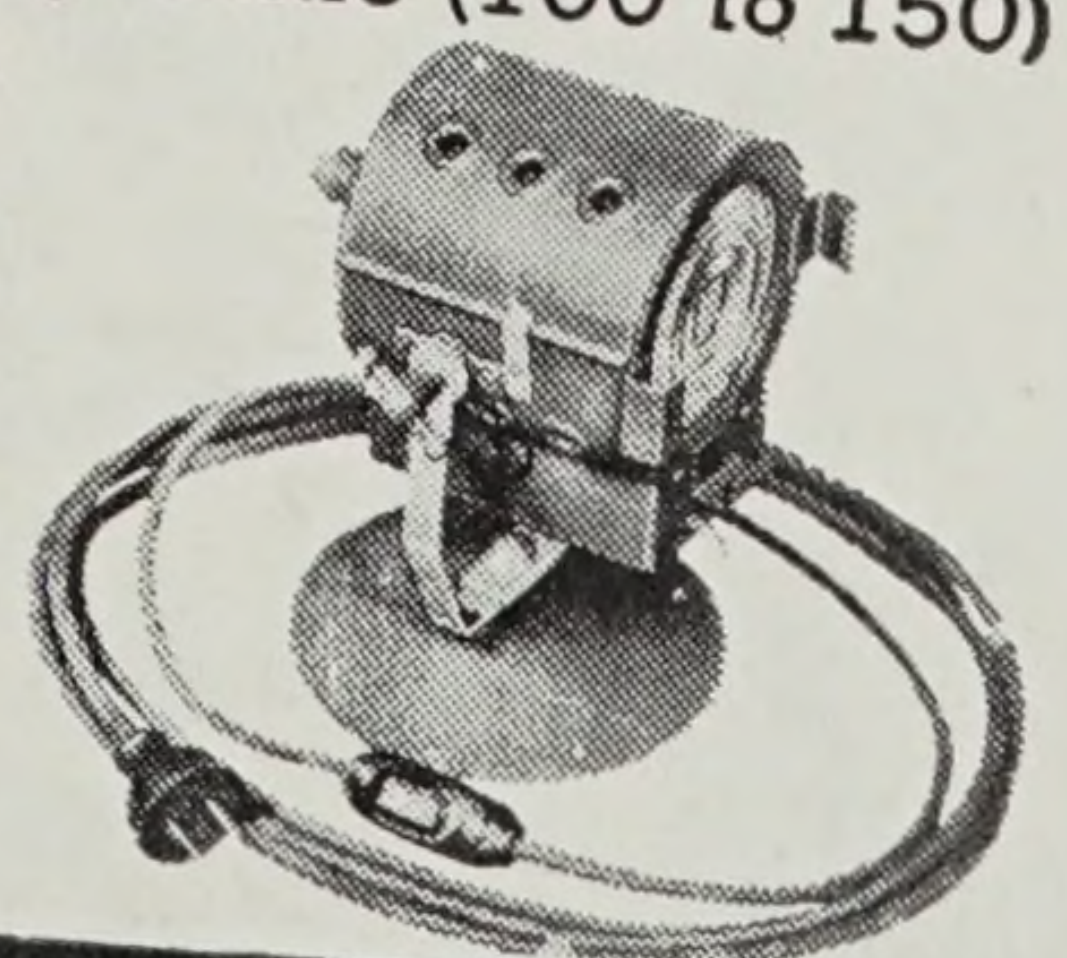
Focusing —4° spot to 44° flood.

Lights—Bipost sockets for precision focusing; uses 500 watt T-20 or 750 watt T-24, C-13 filament medium bipost globes; available either in 3200° K for color photography, or type MP for black and white.

Wheels —Heavy 3-inch rubber tired ball bearing casters for easy, noiseless shifting.

PHOTOGRAPHIC LIGHTING EQUIPMENT

Bardwell & McAlister, Inc., manufactures a complete line of optically correct photographic lighting equipment. Write for free literature on the Senior (5000 watt spot), the Junior (1000-2000), the Baby Keg-Lite (500 to 750 watts) and the Dinky-Inkie (100 to 150) the Single and Double Broads, and Accessories. Address Dept. AC



BARDWELL & McALISTER, Inc.

Designers and Manufacturers

Box 1310 • Hollywood 28 • California

AMONG THE MOVIE CLUBS

Brooklyn Amateur Cine Club

Charles Benjamin has been elected vice president of Brooklyn Amateur Cine club, and Eugene E. Adams secretary — both stepping in to fill vacancies among the officer roster.

Meeting on February 6th at the Hotel Bossert featured one of the club's "gadget nights." Film program included the first of the Harmon Foundation films, "How To Make Better Movies." Showing was augmented with a discussion by the technical committee on various phases of film making.

Eight millimeter division was featured at meeting on February 20th, with J. F. Hollywood of New York 8 mm. Club, presenting the program of color subjects.

La Casa Club

Regular monthly meeting of La Casa Movie Club of Alhambra, Calif., was held February 18th in Y. M. C. A. auditorium, with John H. Clay as chairman of the evening. Interesting film program included "How to Ski," by John K. Northrop, member of the Los Angeles 8mm. Club, and "Western Canada," a 16mm. subject by C. H. Thomsen. The 16mm. kodachrome documentary, "Eighteenth Century Life in Williamsburg, Virginia"; presented by Eastman Kodak Co., was repeated by request of many members.

New York Eight

Ernie Kremer's "Southern Exposures," and Richard Elms' "Nantucket Turnabout" featured the film program of the January 21st meeting of New York City 8 mm. Club, held at the Hotel Pennsylvania.

Tri-City Cinema Club

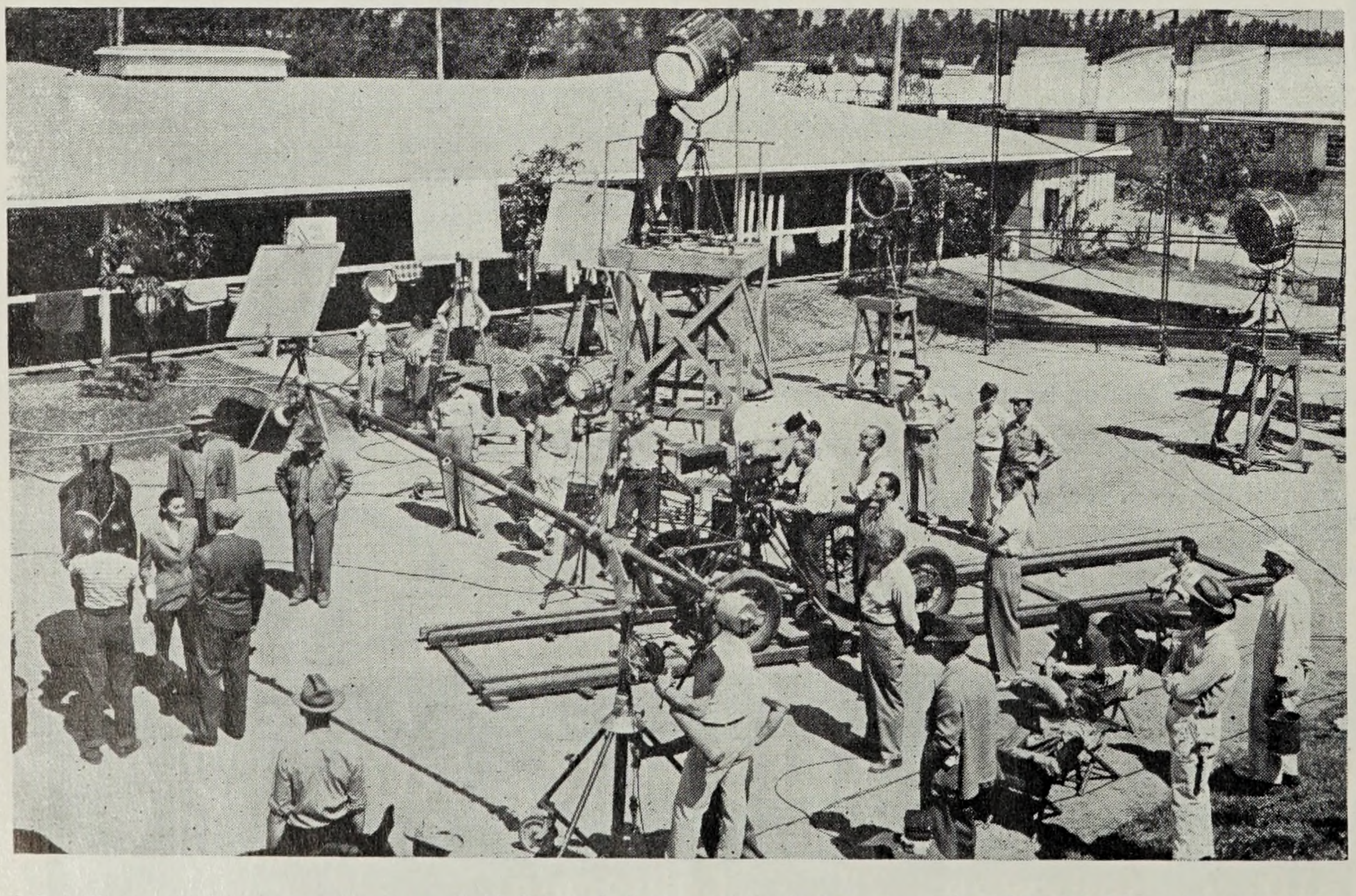
Nearly 100 were present at the January 18th meeting of Tri-City (Davenport, Rock Island, Moline) Cinema Club, held in auditorium of Iowa-Illinois Gas and Electric, Rock Island. After a short business session, film program included exhibition of "Flowers" (8mm.), by Marvin Russell of Rock Island, and "Autumn and Spring" (16mm.), by Miss Georgia First of Rock Island. Paul DeGraff, Iowa representative for Ansco, delivered a symposium on movie films, including "processing of black and white film—illustrated with slides; and a description of Ansco Color, which was accompanied by both a reel of 16mm. and slides.

February 22nd meeting was held at the Davenport Municipal Art Gallery, and film program featured "Iowa Trails," by Mr. Lytle.

L. A. Cinema Club

Proposal to change the name of Los Angeles Cinema Club to Hollywood Cinema Club consumed major time of business session of meeting of Feb. 4th held at the Wilshire Ebell Club. Vote on the question resulted in a tie, 60 to 60, of the members present, and it was then moved that mail ballot of all members in good standing be taken. Deadline for the mail voting has been set for March 1st, and outcome will be announced at the March meeting.

In addition to showings of prize winning films in the recent club contest, members viewed series of Kodachrome slides by Dr. E. Leslie Eames.



Interesting exterior camera setup at Hollywood Park racetrack for scene in Metro-Goldwyn-Mayer's "She Went to the Races." In stable area, James Craig and Ava Gardnr are ready to make a scene, with Charles Salerno, Jr., A. S. C., handling direction of photography.

Sound Projector Demonstrations Set by L.A. Cinema Club

During the next several months, the Los Angeles Cinema Club program committee is arranging to have demonstrations at meetings of the latest models of the post-war 16mm. sound projectors. Idea, advanced by Secretary Jack Shandler, and okayed by the board of directors, is to invite the manufacturers or local distributors of the standard and recognized projectors to demonstrate their machines at monthly club meetings; each projector to hold the stage on a specific meeting night for the running off of two to four reels of sound film.

In this manner, the large number of members interested in purchasing 16mm. sound projectors when the latter are available, will be enabled to obtain a comparative demonstration of each under uniform conditions in the same room. Procedure will also eliminate the loss of time of members in visiting various dealer showrooms for individual demonstrations.

The idea is one which can be easily and readily adopted by other amateur movie clubs throughout the country, especially in those instances where a large number of members are interested in obtaining demonstrations of the new equipment which will be on the market shortly whereby advance reservation orders are not necessary.

The Los Angeles Cinema Club has already contacted two distributors of standard 16mm. sound projectors, and have received enthusiastic assurances of cooperation in the plan. It is expected the others will be lined up within the next month to participate.

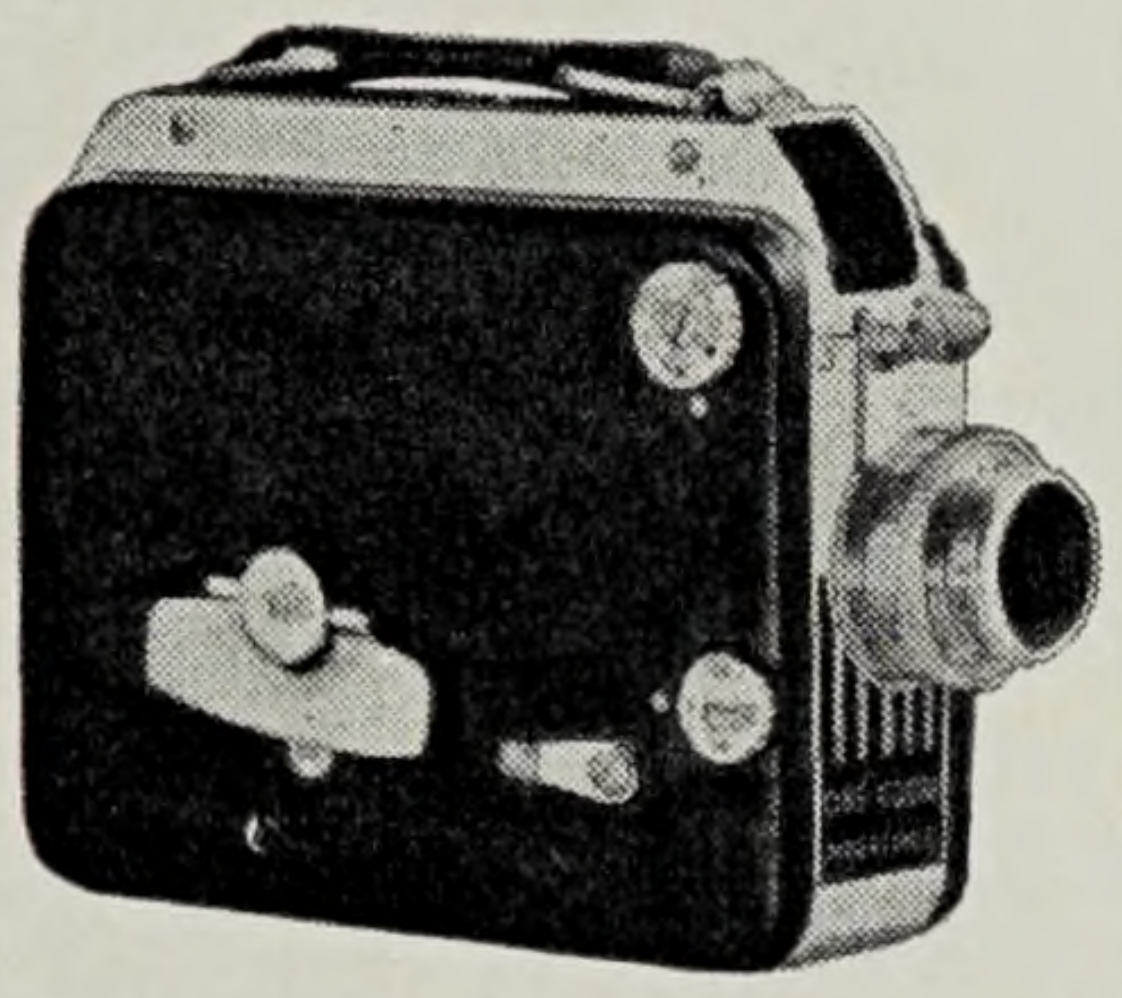
Los Angeles Eight

Los Angeles 8mm. Club held regular meeting on February 12th in the Bell & Howell auditorium, with a talk on "The Technique of Movie Making" headlining the evening, after which several additional entries in the annual contest were exhibited. Club has sent out a special questionnaire to all members, asking for listing of various equipment owned, and for survey of membership interests in the monthly programs.

Public Address System by De Vry

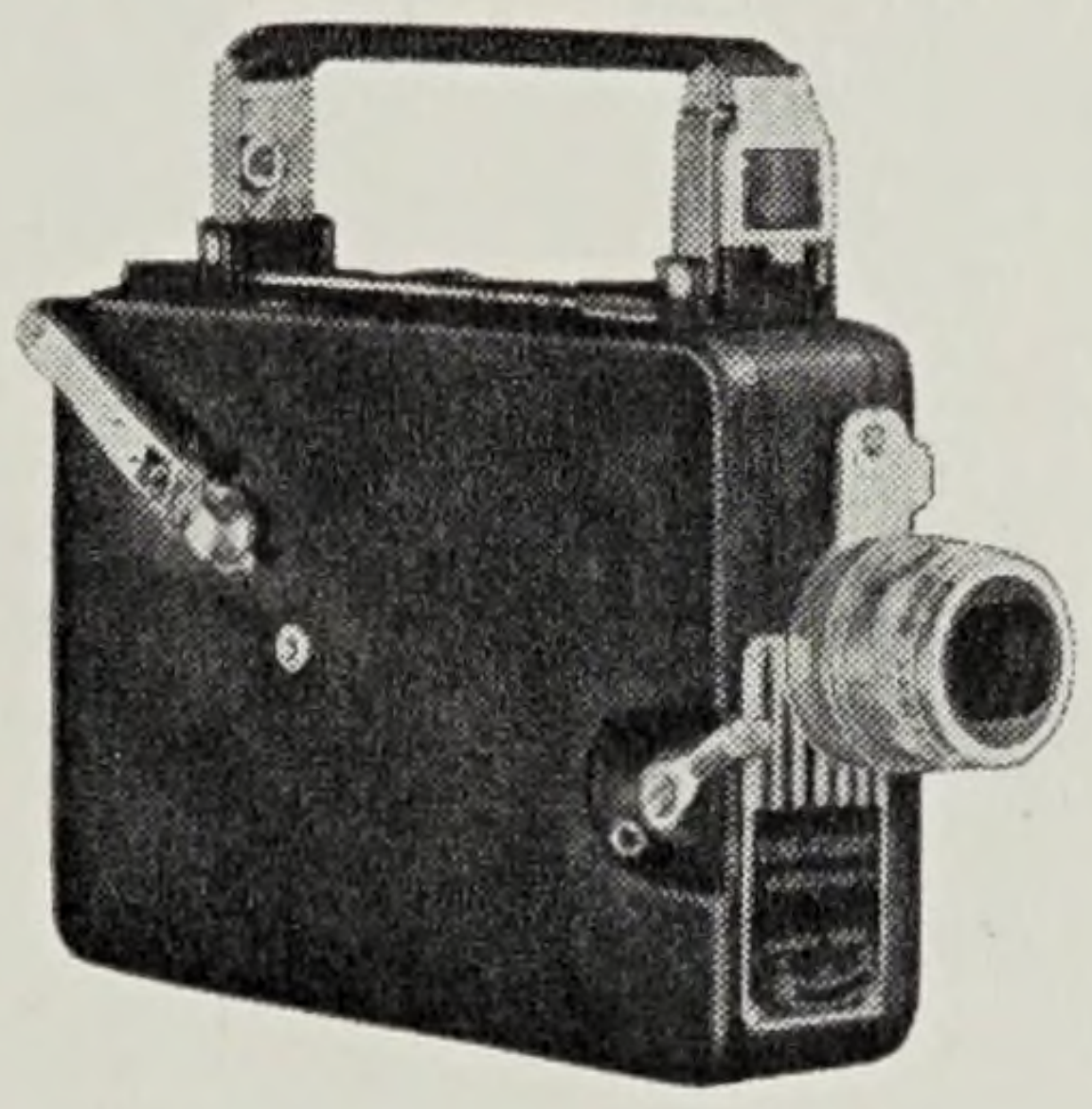
De Vry Corporation of Chicago, has designed and is currently manufacturing four position mixer unit public address systems. With four inputs, four microphones or a record turntable and three mikes may be used.

Forecast for '46...



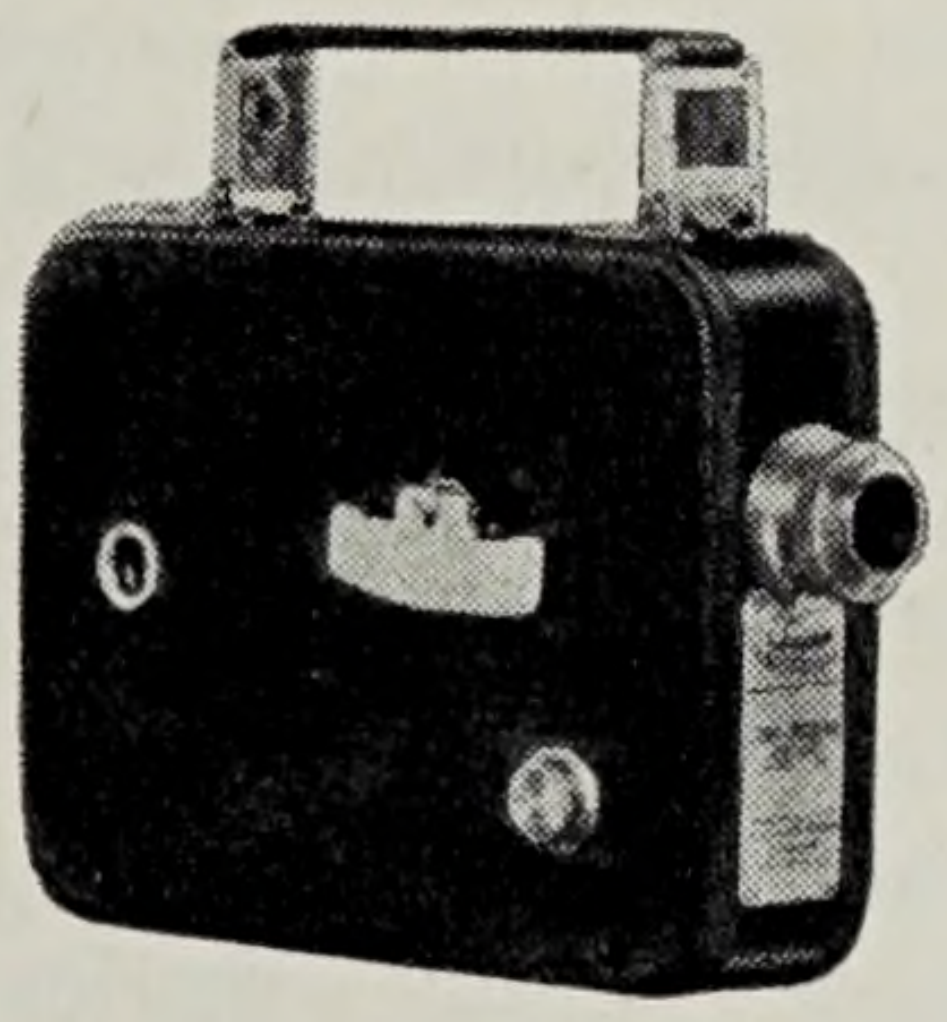
CINÉ-KODAK MAGAZINE 8

Three-second loading with interchangeable Kodachrome or Panchromatic film magazines; f/1.9 lens interchangeable with six accessory lenses, including a wide-angle lens and ranging out to a five-times telephoto; enclosed direct-view finder serves all lenses; four operating speeds including slow motion; unique footage-indicator control "doubles" as magazine release when changing films; pulsing button for gauging scene length; attached Universal Guide for all Ciné-Kodak Films.



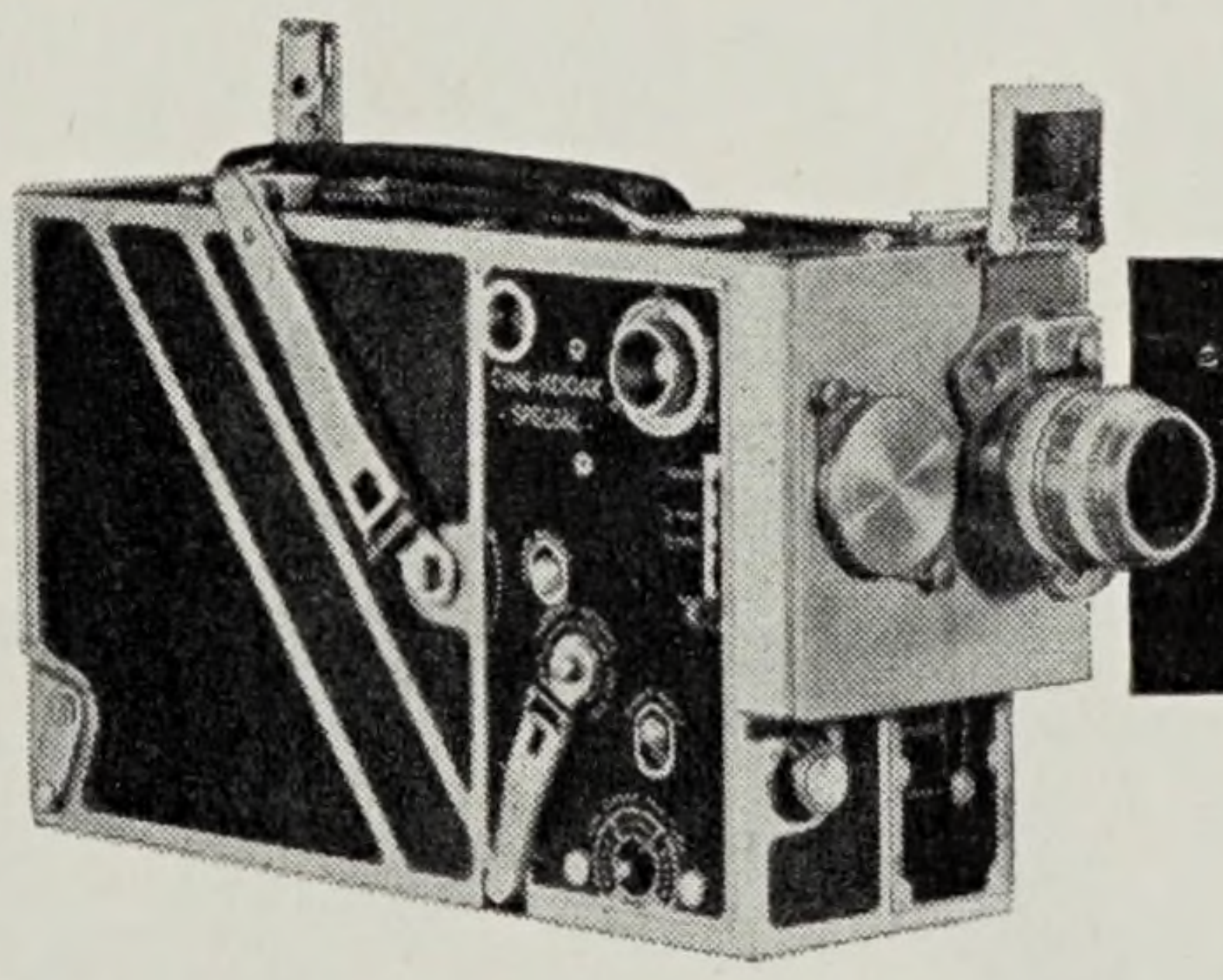
CINÉ-KODAK MAGAZINE 16

Slip-in interchangeable loading with any of four Ciné-Kodak full-color or black-and-white films; f/1.9 lens interchangeable with six accessory lenses ranging from a wide-angle to a six-times telephoto; full-vision eye-level finder serves all available lenses; three operating speeds, including slow motion; automatic motor shut-off; pulsing button for judging scene length; magazine footage indicator shows unused film whether magazine is in or out of camera; attached Ciné-Kodak Universal Guide.



CINÉ-KODAK EIGHT-25

Roll loading—takes the same famous Ciné-Kodak Films provided for the "Magazine 8," plus low-cost Ciné-Kodak Eight "Pan" Film; has fixed-focus f/2.7 lens; secured winding key; locking position for exposure button so movie maker can get into the picture; full-vision eye-level finder combined with carrying handle; automatic footage indicator; Ciné-Kodak Universal Guide serving all Ciné-Kodak Films; combines all practical economy of equipment and operation with top dependability.



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The one "amateur standard" movie camera acclaimed by engineers, biologists, physicists, doctors, athletic coaches; makers of industrial, advertising, and training films—and all other advanced workers in 16mm. movies—as adequate for the filming problems they must overcome and for the professional effects they desire. No first camera for the newcomer—yet definitely the ultimate camera for those seeking easy mastery of 16mm. movies at their very best.

Ciné-Kodaks and Kodascopes are on the way

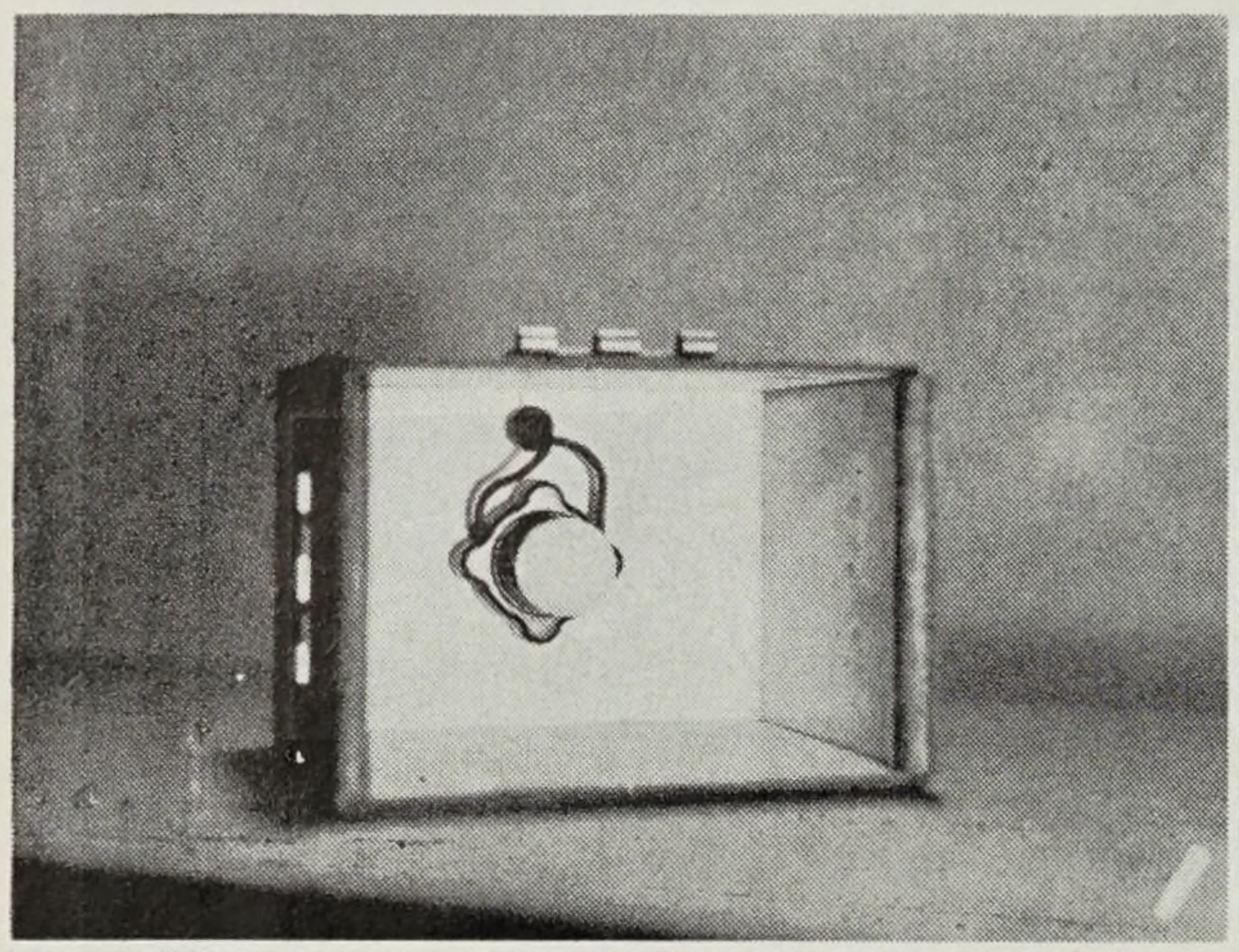
ONLY a very few—right now. Then, more and more in the weeks and months to come . . . economy "Eights" . . . versatile, easy-to-operate Magazine Ciné-Kodaks—both 8mm. and 16mm.—the most popular movie cameras in the world, regardless of price . . . and that finest of all 16mm. cameras, Ciné-Kodak Special. Kodascopes will return by the same schedule . . . 8mm. silent projectors . . . 16mm. projectors, both silent and sound.

See your Ciné-Kodak dealer—soon—about your future Ciné-Kodak. And while you're there, stock up on Ciné-Kodak Film . . . full-color Kodachrome or brilliant black-and-white. He should have all you want—just in time for your spring movie making . . . Eastman Kodak Company, Rochester 4, N. Y.

Kodak

TITLES OF DISTINCTION

By JAMES R. OSWALD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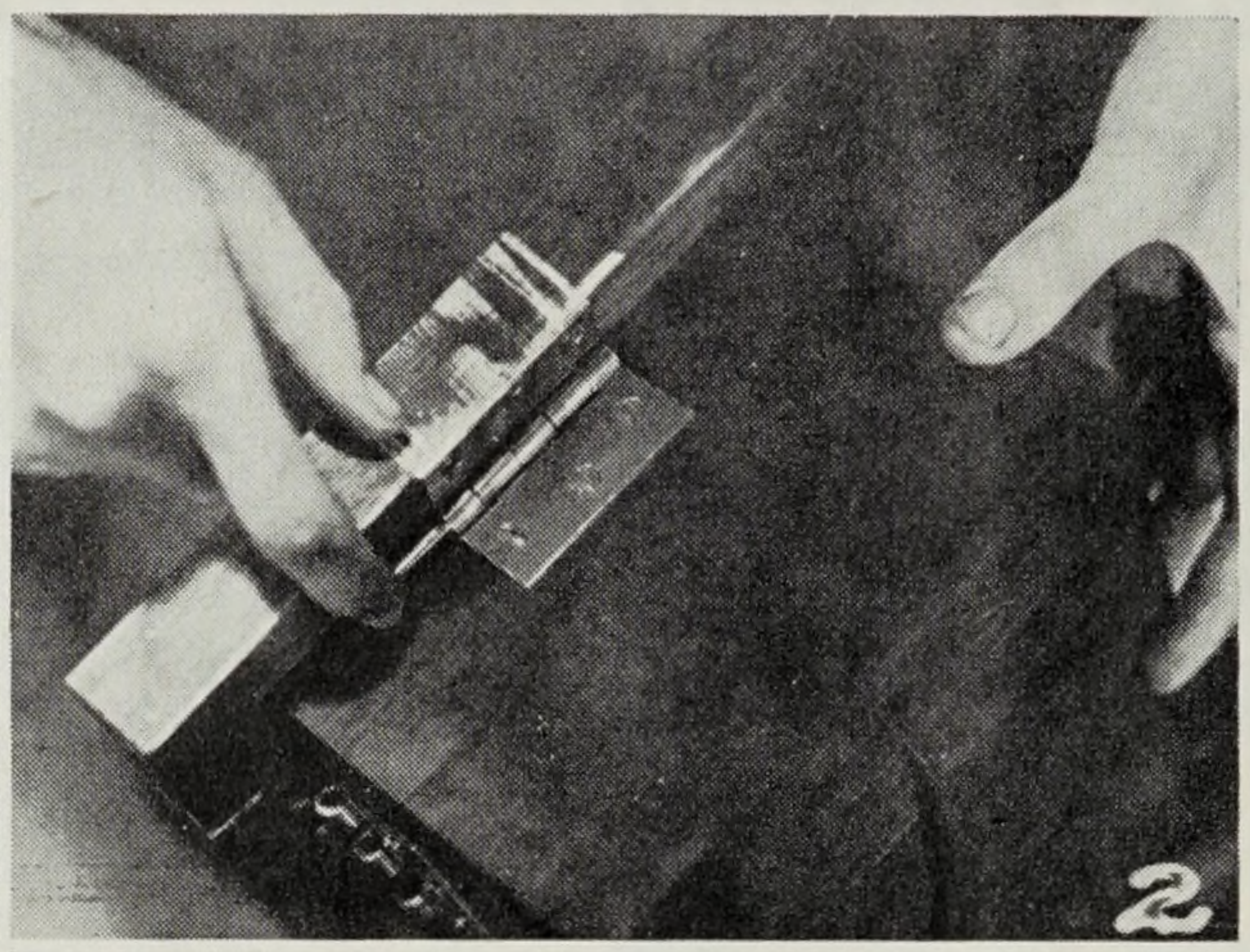
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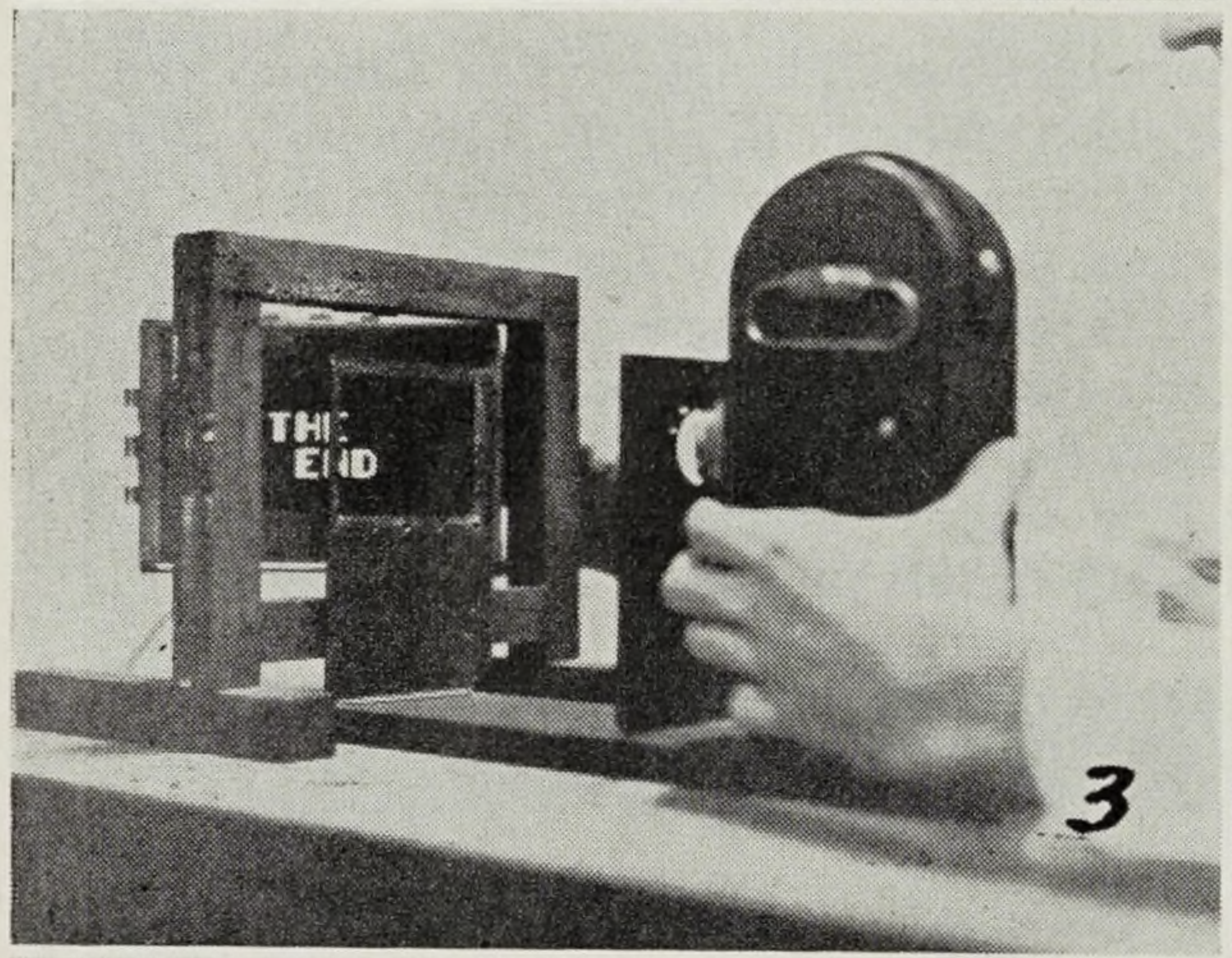

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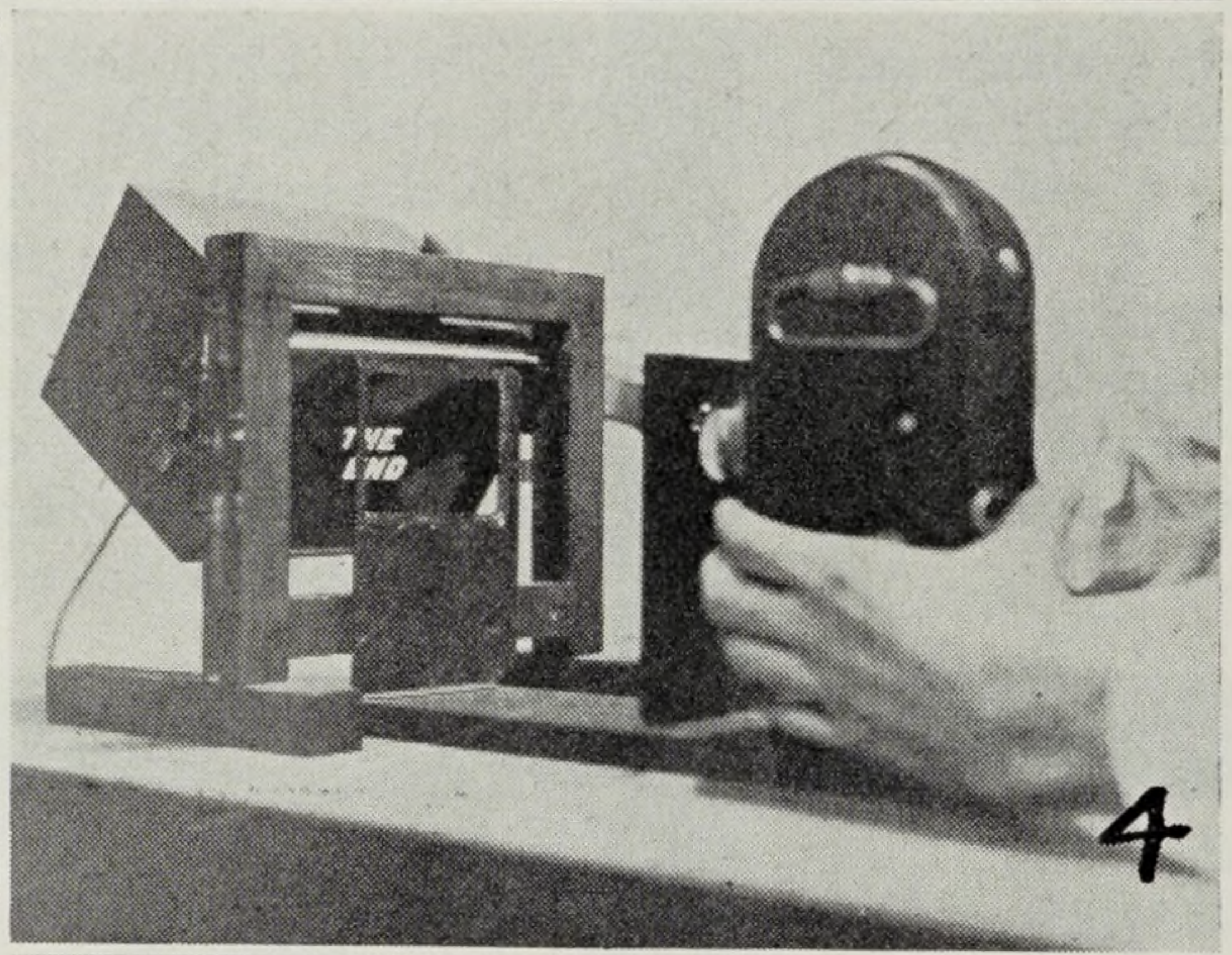
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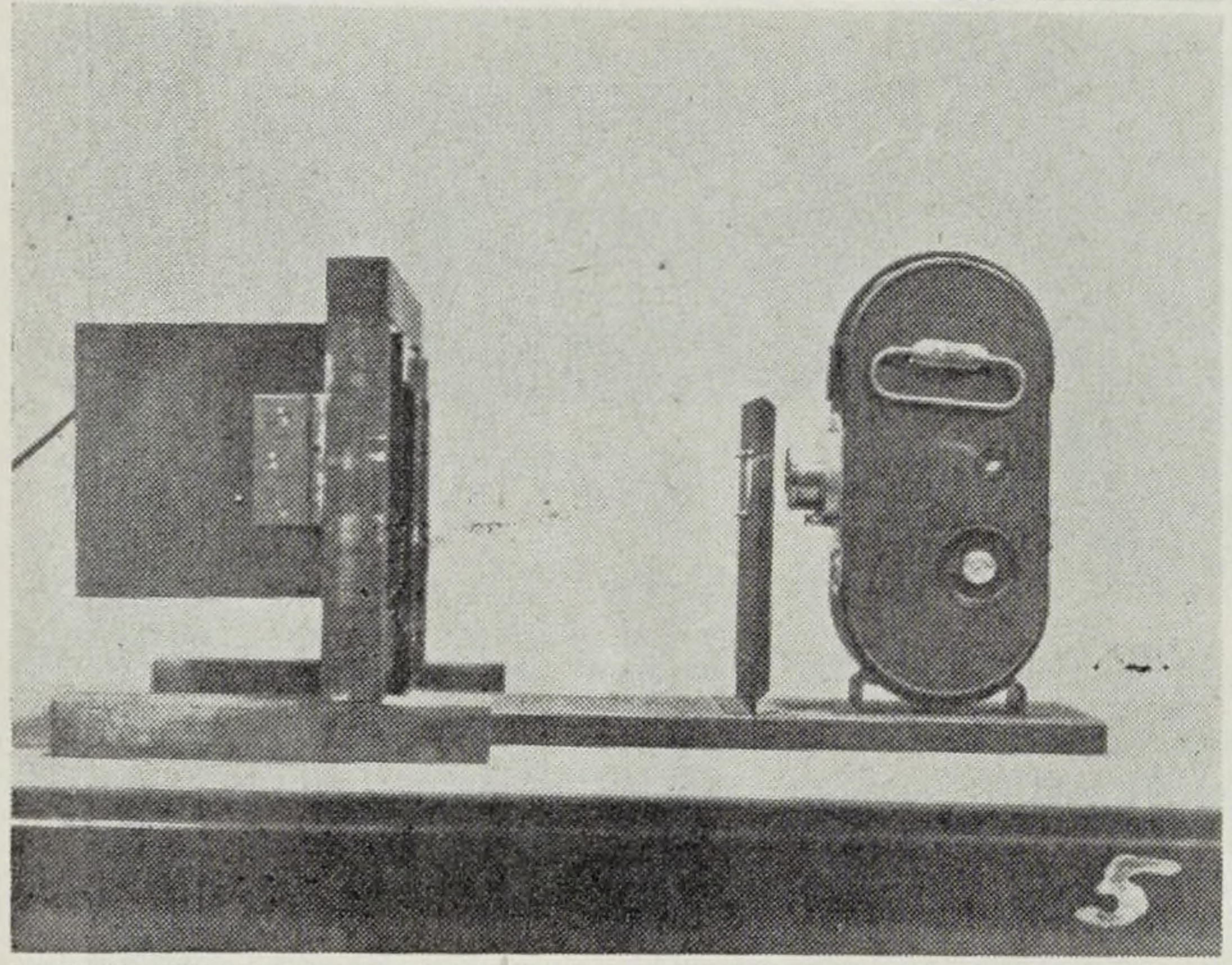
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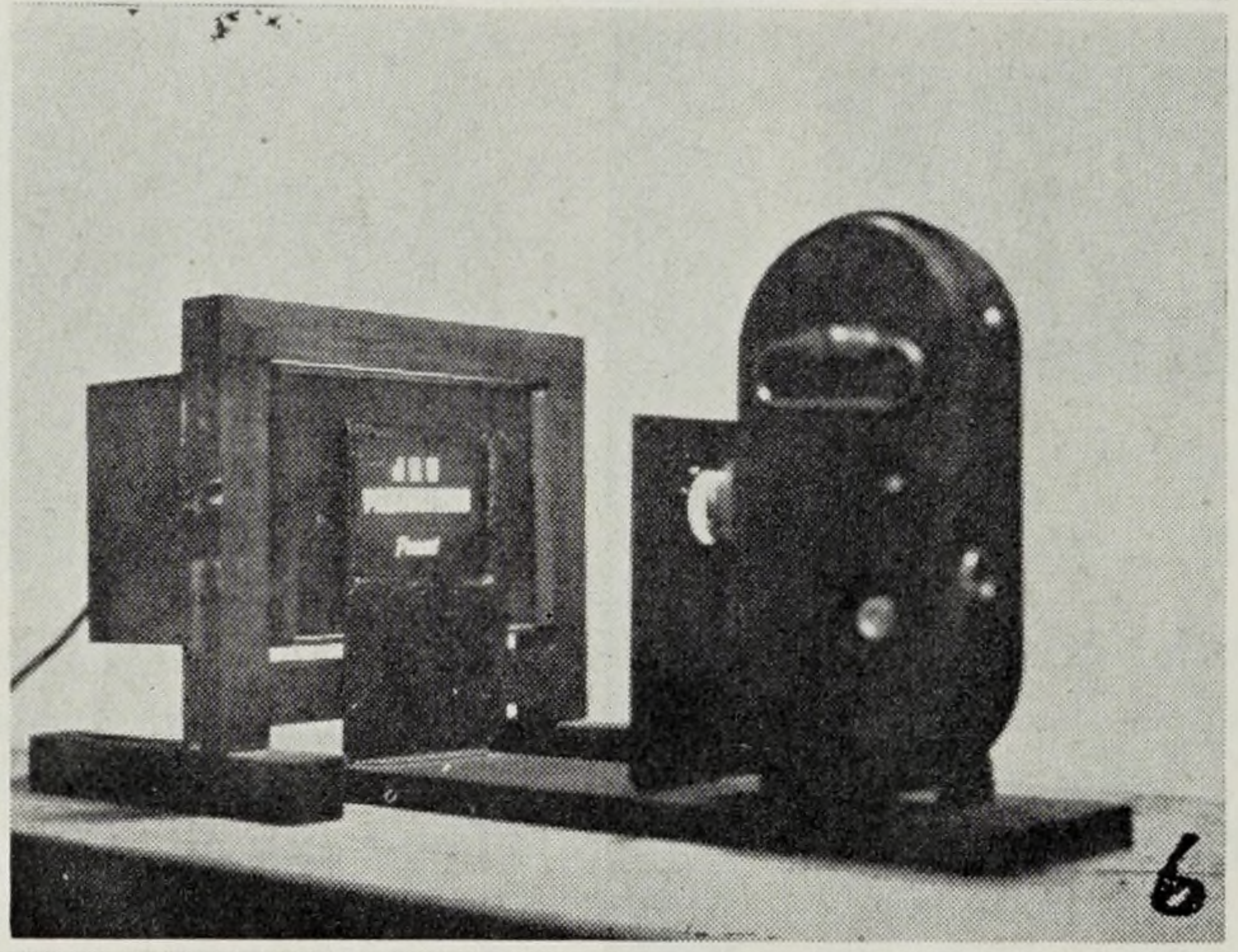
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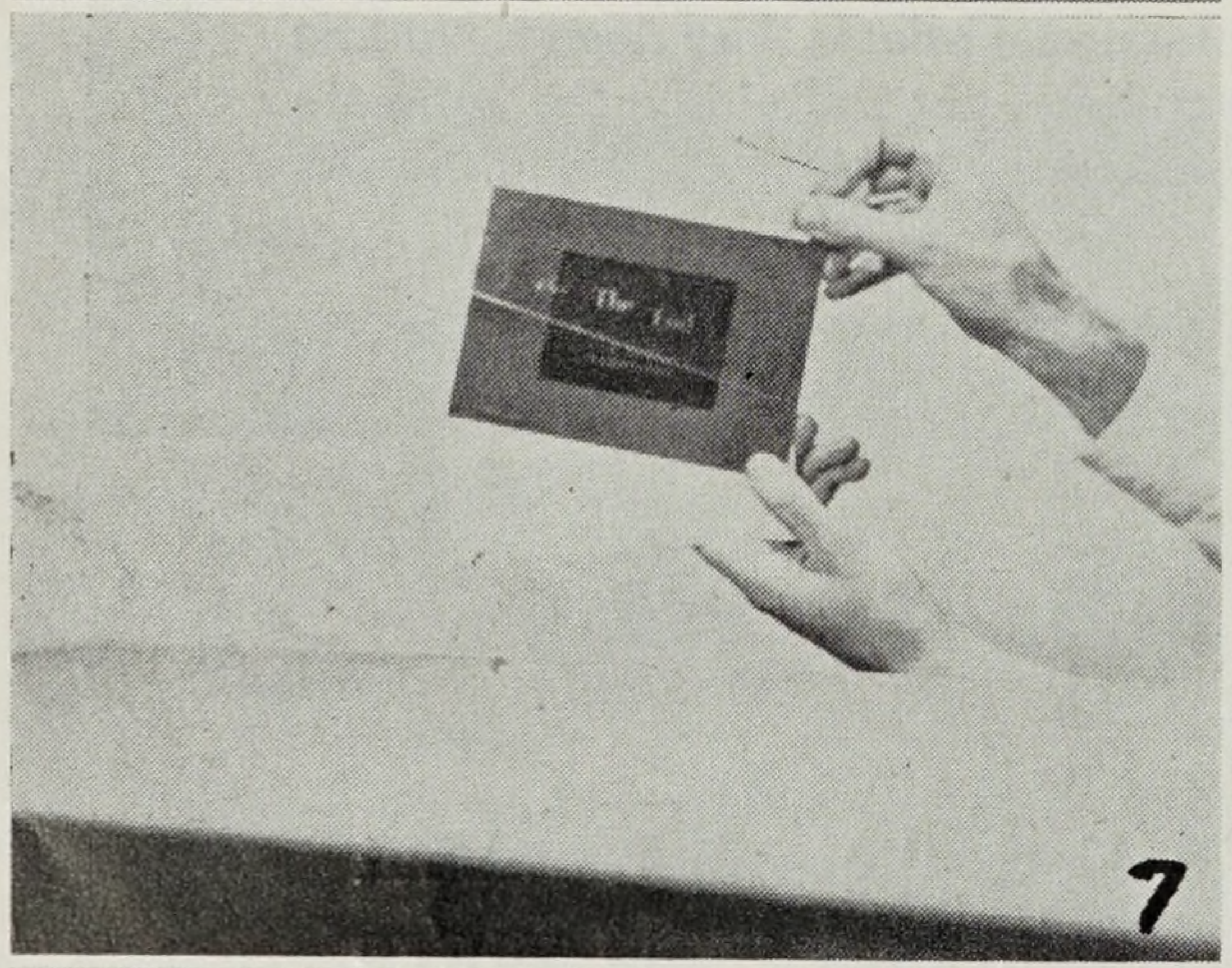

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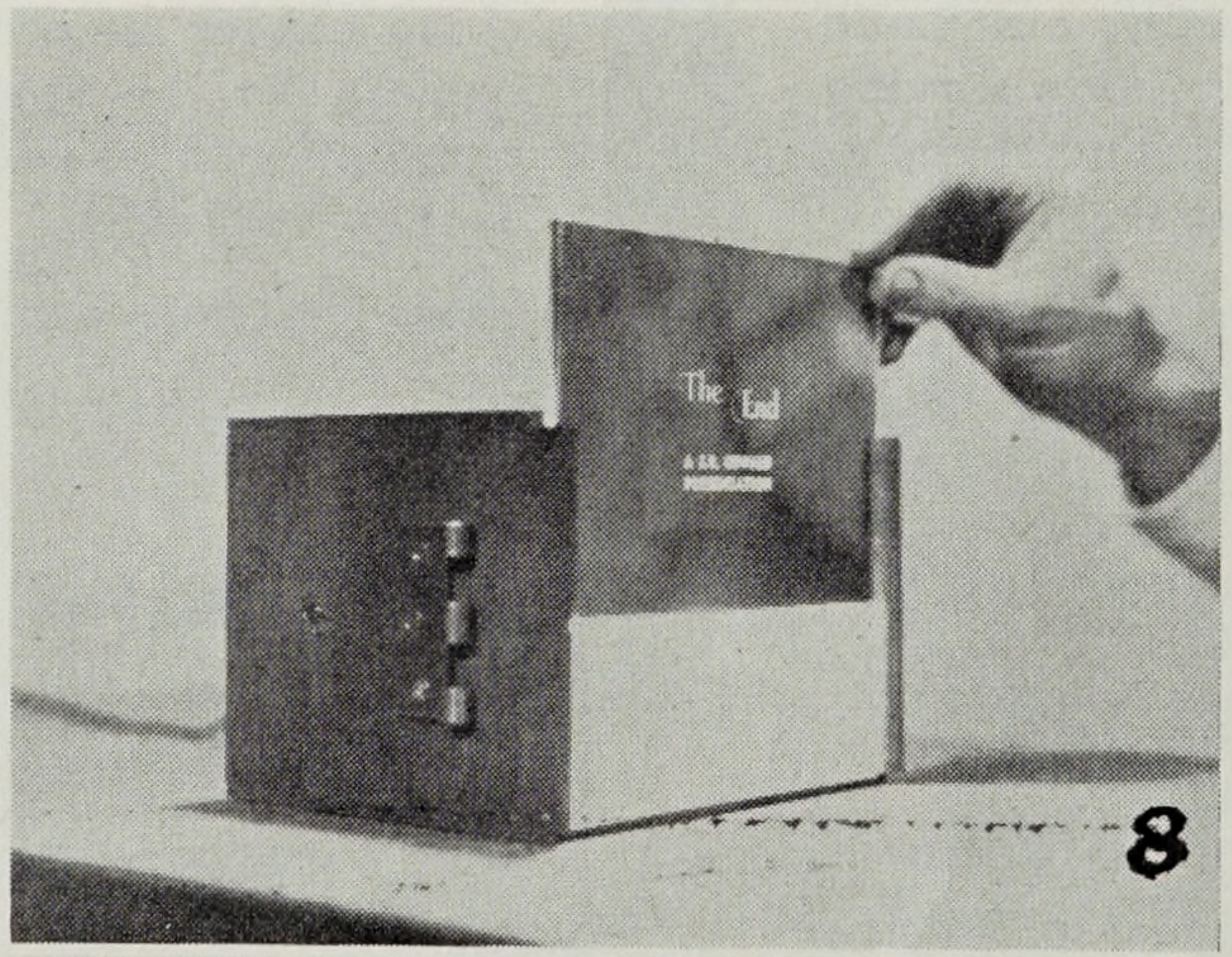

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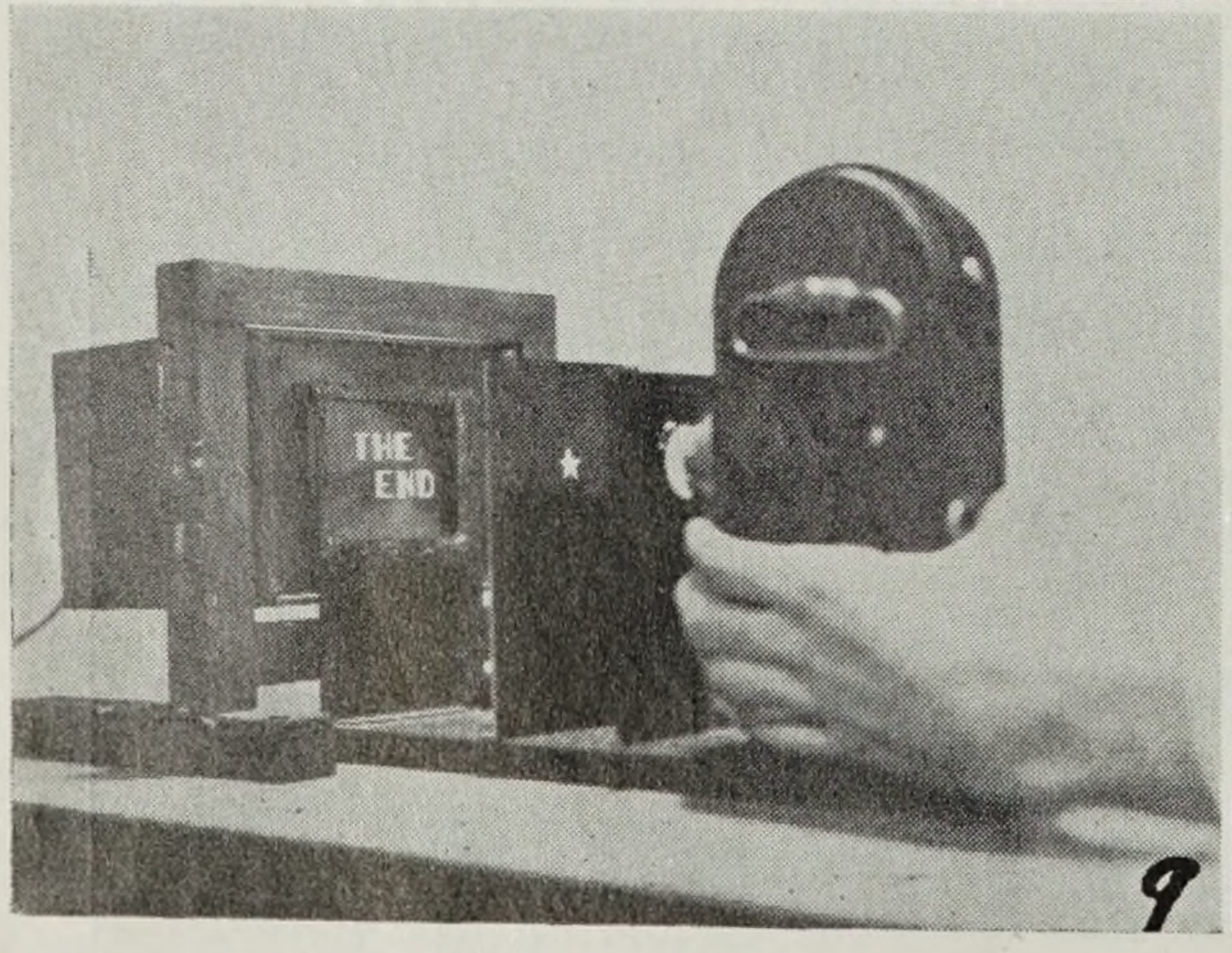

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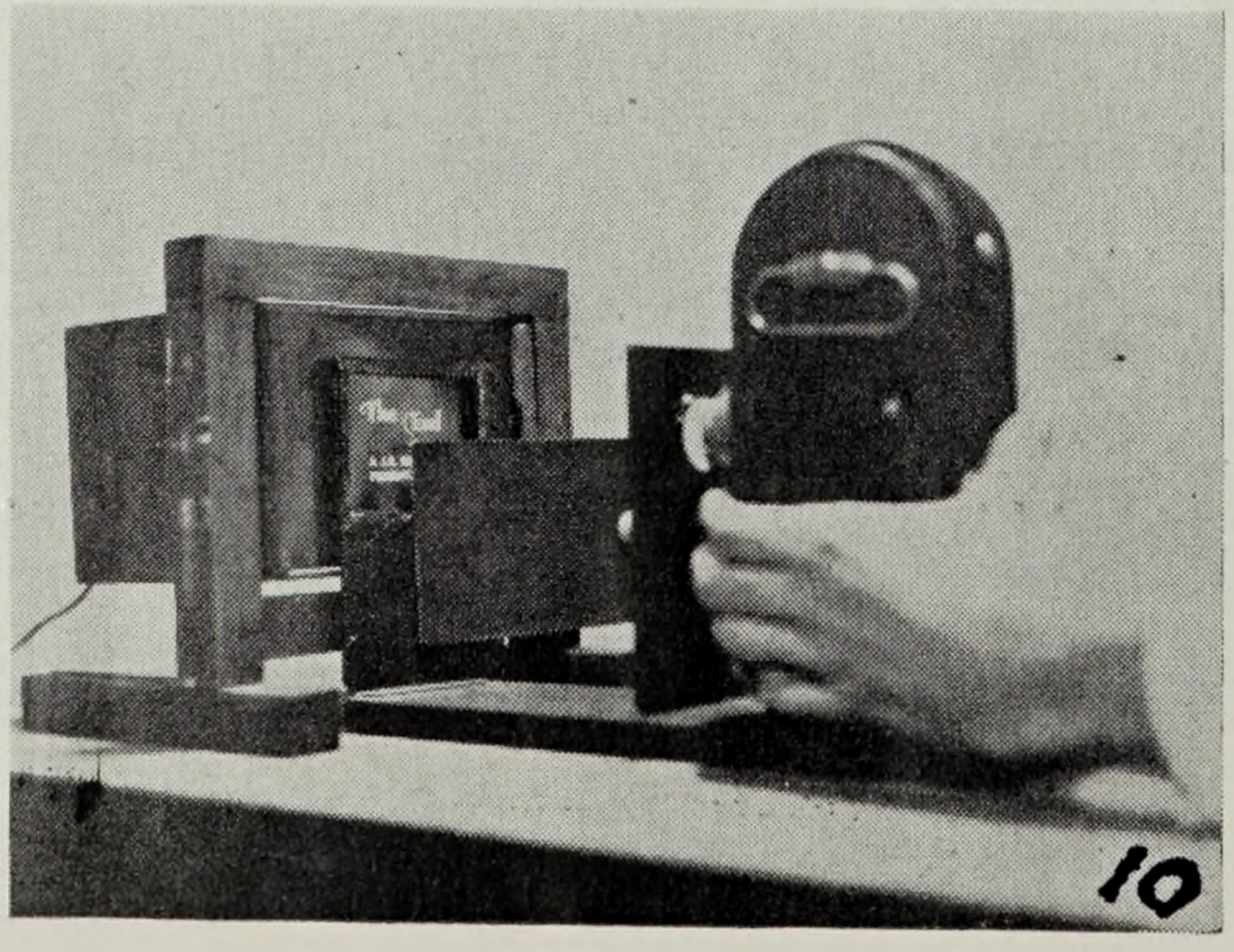
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TITLE making is fast becoming a source of enjoyment for the movie maker that rivals the actual taking of pictures itself. Discriminating amateurs, no longer content with the routine shooting of title cards "straight," are constantly alert to new ways of lifting their titles out of the "ordinary" class. In this connection, much is to be gained by watching closely the innumerable, clever effects of professionally made movies, next time you visit your local theater, with an eye towards incorporating some of these interesting innovations to your own movies.

True enough, one can hardly hope to compete with Hollywood in every respect, with its endless talent, equipment, and resources, but it's surprising what can be done with limited equipment and a creative head!

In spite of the many unique tricks that are used to enhance professionally made titles, one of the most intriguing, in my opinion, is the superimposition, wherein the desired wording appears over an actual motion picture background. Other title styles seem to come and go, but the superimposed version retains its popularity.

As many are already familiar, this requires that the film be double exposed. There are several ways of accomplishing this feat, professionally, including the use of the camera, the motion picture printer, and various applications thereof. Obviously, the novice has but one alternative.

The usual method for the amateur to make these superimpositions is by double exposing the film in the camera. It is customary to expose the background scene, after noting the footage guide, and wind the film back to the starting point of the scene in the darkroom, and then expose the title against a jet black background. It makes little difference whether the background scene or the

(Continued on Page 96)

Illustrated at left: (1) Interior of the light box, showing placing of the lamp socket and lamp. A Rheostat can control the intensity of the 10 watt lamp for perfect fades. (2-3-4) Hinges enable the bo to pivot in any one of three directions—for swing-in or out titles—merely by inserting the proper hinge pin, nad removing the two not in use. (5-6) Side views, showing how the apparatus is used in conjunction with the regular title making equipment. (7) The transparent title card, a film negative, is "sandwiched" between two pieces of glass; one preferably an opal glass to diffuse the light. (8) The glass "sandwich" is then placed in grooves at the top of the light box, and slid to the bottom, where it will remain securely in place. (9) Here a star shaped mask has been cut from black paper, and mounted on a stiff card, for outline effects. Masks may be cut in various patterns, and zoomed towards the camera. (10) Wiping a card across the title field in various fashions, with the camera running, gives wipe effects. Your own imagination is the limit.

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- 2 Amplifier Power Cables
- 2 Sets of Earphones
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- 2 Microphone tripods
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- 1 Crank handle
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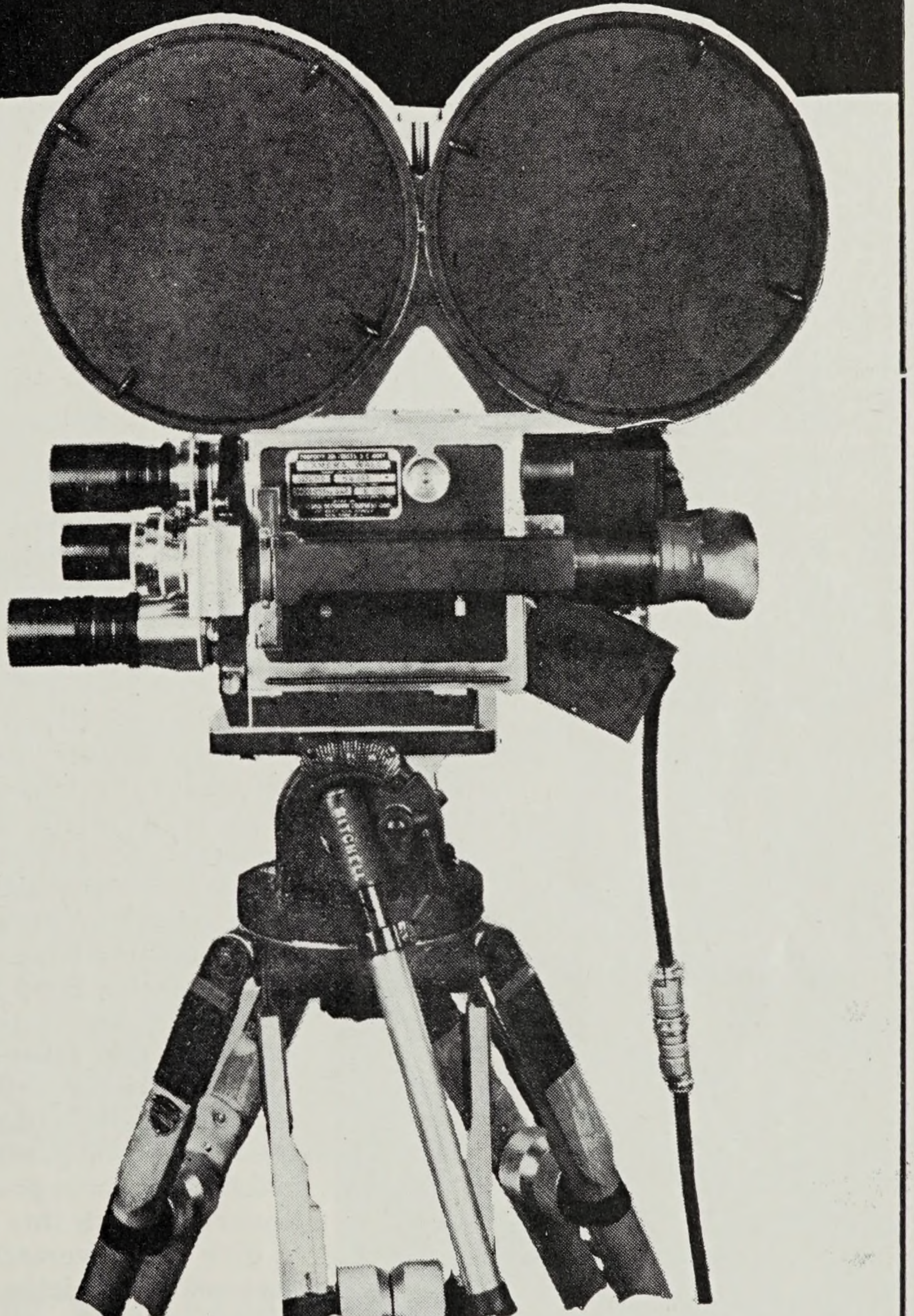
- 1 Tripod with freehead and boot and saddle
- 1 Triangle

1—Magazine carrying case with 2 1000' magazines $263.00

1—Magazine carrying case with 4 400' magazines $364.00

TOTAL PRICE $9,990.00



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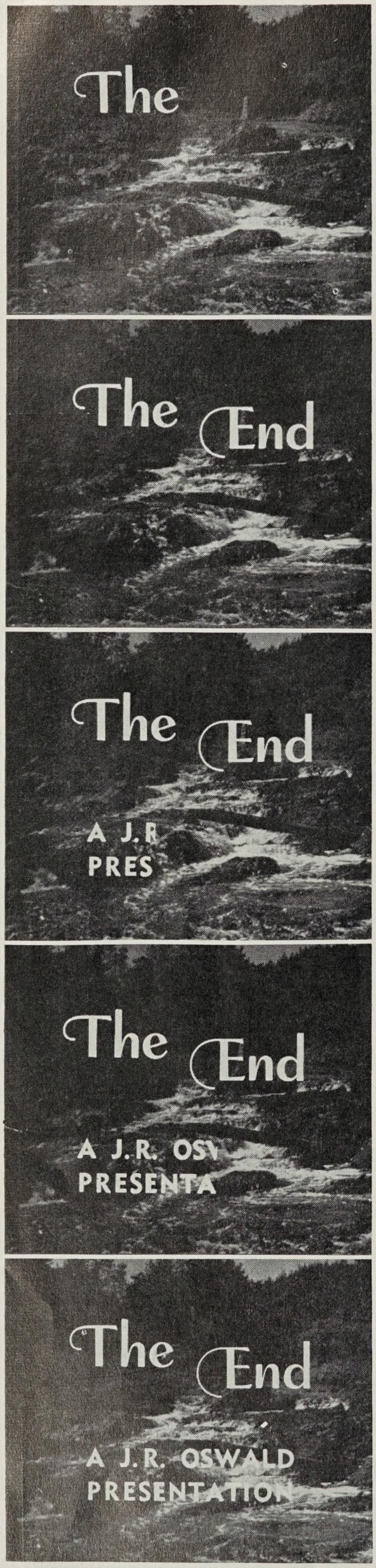

Wiping a card across the title field in various fashions, with the camera running, gives wipe effects. Your own imagination is the limit.

Titles of Distinction

(Continued from Page 94)

title is exposed first, but it is customary to slightly underexpose the picture part, to make the white letters stand out.

There is one objection to making this type of title in the manner just described, however, and one which has caused me to deviate from the customary practice. It is extremely difficult to light the title card in such a way that only the white letters register on the film, giving the finished product snappy contrast, with clear cut letters against a background in motion. My determination to perfect this type of title, which has always appealed to me was unyielding.

After considerable experimentation, and many disappointments and failures, I set out to find a new way to improve these superimpositions. To this end my efforts were rewarded when, having remembered reading of rear-illuminated titles, I decided to try lighting these titles from the *rear*.

Using *transparent* title cards, made by photographing the original title card *first* with a still camera, to obtain a film negative, serves a purpose that is twofold: First, it provides the required opaque background to the white, *transparent* letters through which the light will shine; second, it enables the free use of black ink in the original design, which is much easier to work with than white.

While basically all that is required in addition to the regular title making apparatus to make these superimpositions is a small lamp bulb, a couple pieces of glass the size of the title field, and a few short lengths of Scotch tape, as a matter of convenience I rigged up the lamphouse part of an old enlarger as a combination lamp holder and title card holder, to which the titles are taped. Although this set-up served the purpose quite well, I saw further possibilities for rear-illuminated titles.

Gradually improving my methods for making superimpositions, the gadget illustrated with this article was designed to give added versatility and ease to the process. The pictures and captions are self-explanatory, and require no detailed comment in order to grasp the steps involved. Though the outfit was constructed to specifications for use with my own particular camera and title making apparatus, such an accessory could easily be adapted to each individual case.

It should be mentioned that a rheostat can control the intensity of the 10 watt lamp in the light box, for perfect fades, while the hinges enable the box to pivot in any one of three directions, for swing-in or out titles, merely by inserting the proper hinge pin, and removing the two not in use. Similarly, wiping a card across the title field in various fashions, with the camera running, gives wipe effects. Your own imagination is the limit.

Best of all, these superimposed titles are possible with the most inexpensive of home movie cameras. Once you've seen what can be done along these lines with *your own* equipment, you'll be convinced. Possibilities depend upon your own skill and inventiveness. That's why I say, for real *superb* titles, try rear-illumination!

Cinema Club of San Francisco

Regular monthly meeting of Cinema Club of San Francisco was held February 19th at Women's City Club. Vice President Larry Duggan functioned as meeting chairman and arranged a varied film program, including: "Breakfast Is Ready," a comedy in kodachrome by Harry Berman of Westwood Movie Club; "The Bum," by Col. M. T. Lewis; "Trip to the Logging Country." combination kodachrome and black-and-white by Benjamin Nichols; "Ten Pretty Girls," a kodachrome from the film library; and "Fiftieth Anniversary Celebration of Nurses Training School, St. Helena Sanatorium," by Dr. T. J. Lyman.

Leon Gage is arranging a trip to an exclusive and unusual nursery where members may try their cameras on the flowers as subjects. Future meeting programs include showings of new equipment and accessories; demonstrations of the new Ansco color film, and sound-on-wire apparatus.

Byron Opens New 16mm. Laboratory

New 16mm. labaratory, complete in every detail and equipped with the most modern film processing machines and equipment, has been opened by Byron, Inc., in Washington, D. C. Building, separate from the company's complete sound studio for 16mm. production, is the first in a series of post-war expansions planned by the Byron organization.

The new facilities, added space and equipment, will triple the printing capacity of the Byron laboratory, and assure continuance of delivery of full-fidelity black-and-white and color correct prints which has been featured by the firm for several years. And for the first time, Byron offers clients complete black-and-white processing through a continuous-process developing machine.

Layout was carefully planned for maximum efficiency—temperature is controlled, and all air is filtered to prevent dust damage. Space has been provided for several pieces of latest post-war equipment which is slated for delivery and installation within the next few months.

Byron, which provides studio production and sound facilities in addition to the laboratory, is keeping in step with the tremendous expansion of the use of motion pictures in the commercial and educational fields, and has extensive plans for future expansion in a long-range program.

Come on in—the picture's fine!

WHEN you make movies of the nicest little girl in all the world (or any other important subject, for that matter), you have every right to expect that the film in your camera will produce crisp, bright, lifelike screen images.

And that's just what you'll get if you've had the foresight and good judgment to load your camera with Ansco Hypan Reversible film. Hypan helps you to get good pictures—high quality movies you'll be proud to show—movies you'll never have to apologize for.

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HYPAN FILM

THE DIFFUSION DISC

By IRVING BROWNING

There is more behind every motion picture than the layman can imagine or detect. In the old days, technical flaws, jumpy motion, blurred photography, were all taken in the movie fan's stride. Just to be able to see a moving picture was a marvel that far outweighed any criticism of its quality. Today, however, technical perfection is a definite requirement, and picking boners seems to be the objective of some movie fans, but that is all to the good, because it keeps motion picture technical staffs toeing the mark.

Since it is the privilege of the movie fan to seek out our errors and criticize them, it is for us to recognize and acknowledge technical methods that have become obsolete. This article on the Diffusion Disc lays more stress on its demerits than on its merits.

I, myself, have used the disc or its counterpart in the movie camera, still camera, and enlarger, but now it belongs to a long past era of photography. Even though it is not as widely used now as formerly it still appears in close-ups so often that it seems like a blur in contrast to a sharp film. The point I want to make is, should a diffused sequence be used, regardless of its purpose, which is detrimental to good eyes as well as poor eyes? My feeling is that there is no comparable point between its harm to the eyes and the aid it gives in photographing a difficult subject.

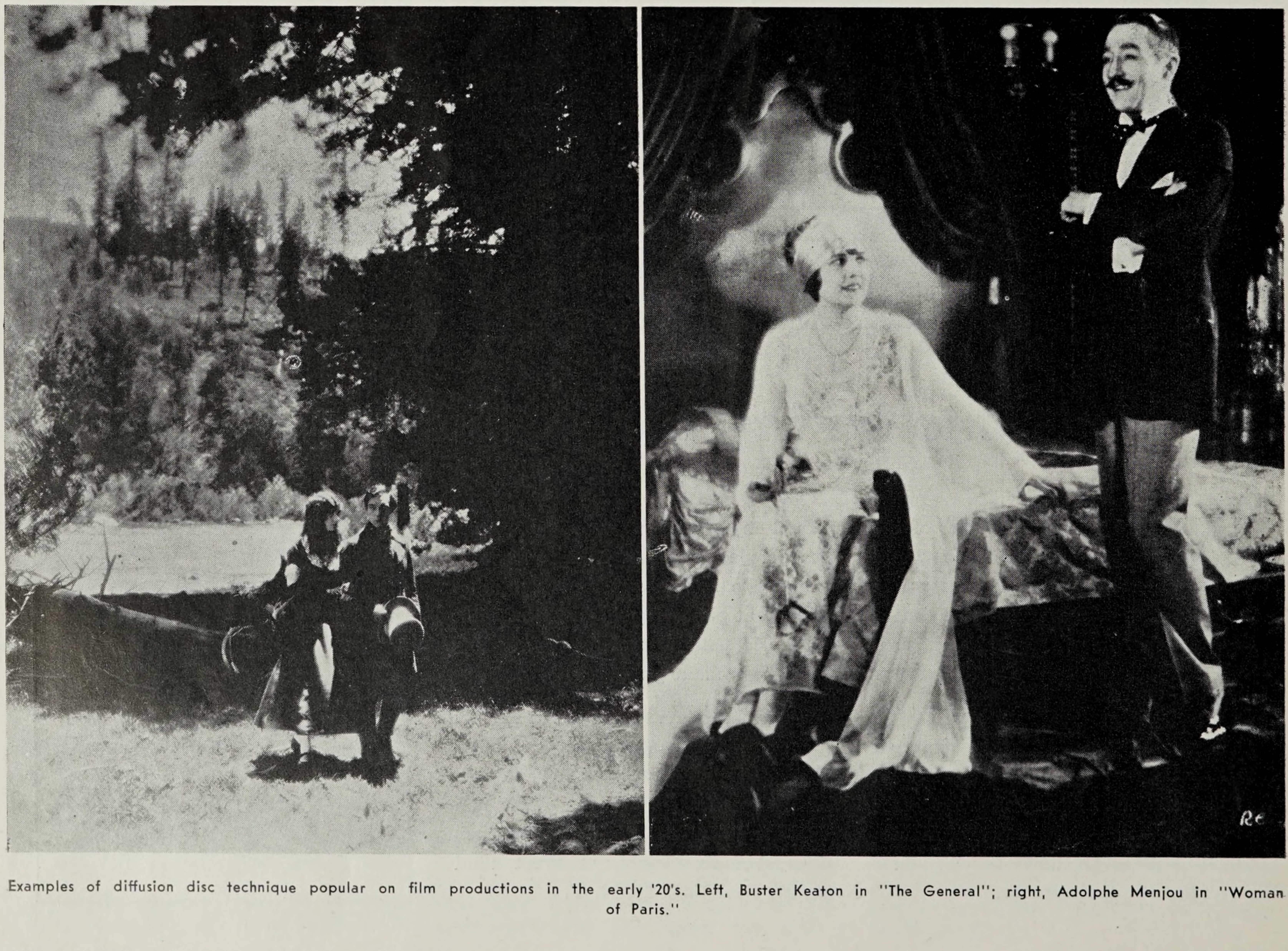
I know all the arguments for and against its use. I appreciate how much artistic effort a cameraman must sacrifice in order to cover up any facial defects in a close-up which make-up alone could not accomplish. I appreciate, too, how important it is for the producer to present his valuable wares in the best light to his buying public.

Much of the fault lies with the movie audiences, who for a long time have put beauty in first place and performance second. For the sake of beauty we have the make-up department on one hand and photography on the other. When these two forces cannot accomplish a result of beauty by make-up and light, then the Diffusion Disc is brought into play. By disturbing the light rays this blurs up the entire scene to get a diffused, close-up portrait. Thank goodness it appears only in close-ups.

Science has made great progress in developing aids to better vision. The screen also has developed in that direction. The use of a Diffusion Disc is like removing the glasses from one with poor vision, and gives a comparable effect to those with good vision.

I always consult my dictionary for exact definitions, and this time Webster defines "Diffuse" or "Diffusion" as "to pour in different directions—to spread—to scatter." The use of a Diffusing Disc in front of the lens will scatter the light rays—spreading them in different directions or diffusing the view.

In the early 20's the diffused photograph and motion picture came into vogue. The screen, seeking a new approach to art, used this method of diffusion for artistic effect. The Diffusion



Examples of diffusion disc technique popular on film productions in the early '20's. Left, Buster Keaton in "The General"; right, Adolphe Menjou in "Woman of Paris."

Disc imitated the art of painting, and at that time any imitation of an art was better than no art at all.

Edward J. Steichen, the dean of American still photographers, once told me a humorous story in connection with his first experience with diffused ("soft focus," as it was also called) photography.

"Many years ago," he said, "I was on a photographic assignment, making a series of exteriors for a national magazine. In the midst of this it began to rain, and I hurriedly completed the scheduled photographs so that I could finish my assignment. On my return home I developed the films and found that the last negatives I had made during the rain were not sharp, but soft—as if my negatives were out of focus. The lens had become moist from the rain and the result was a "blurred" effect.

"Because I did not relish the idea of going back to do those negatives over again, I printed and delivered them, together with the others, and made no mention or excuse for the "blurred" pictures. I only hoped they would be accepted without comment.

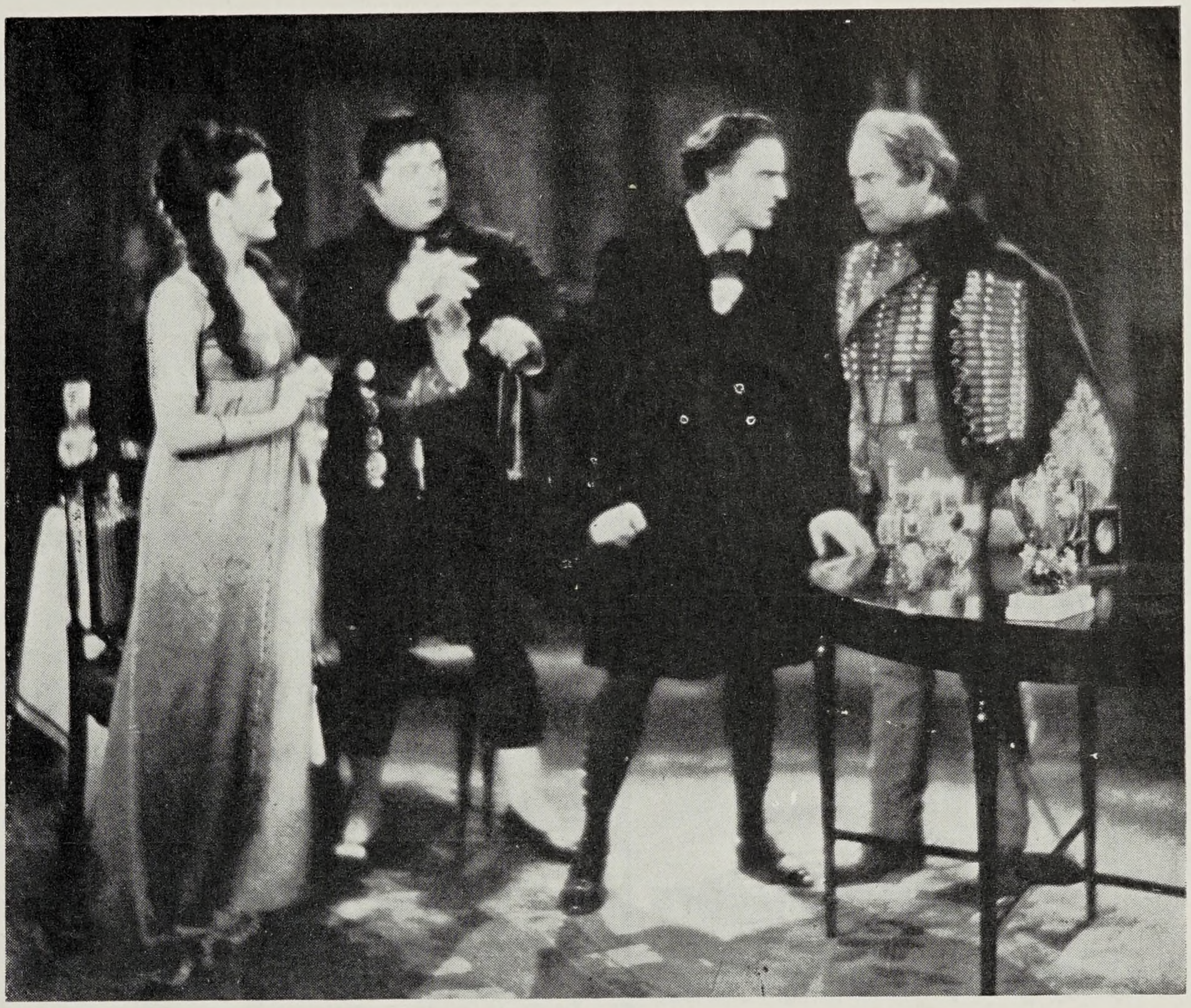
"Some time later the art director of the same periodical telephoned me and I was offered another assignment. I went to his office to receive instructions, and after arrangements were made my client concluded enthusiastically: ' . . . and please—give us that fine art effect which you had in some of the photographs on your last assignment.' With this I left, wondering what to do about the 'fine art effect'!"

When Steichen got on the job, however, he conformed to the usual procedure. He set up his camera, adjusted the lens, shutter, holder; everything was ready. Then, at the last minute, as he put it, he "Spit on the lens." The shutter clicked and, hocuspocus, out comes soft focus pictures—the art of Steichen's photographic masterpieces reproduced again!

Karl Struss many years ago designed the Struss Pictorial lens, a soft focus concoction which he sold by the hundreds for still photography. Later he designed such a lens for movies.

Before the use of the Diffusion Disc many cameramen used crepe-de-chine—that transparent black silk cloth rightfully used for milady's clothes. When it was used in front of the lens one thickness made slight diffusion, and double thickness made heavy diffusion; a small hole burned in the center of the cloth left the center sharp, while the rest of the picture was diffused. As the demand for clear, sharp pictures made itself felt, diffusion gradually disappeared. Now lenses are coated in order to throw off any scattering of light which tends both to diffuse and over-expose highlights.

Diffusion is as hard on the eyes as is out-of-focus film. Many people wear glasses to correct indistinct vision, but the diffused picture again makes the image indistinct to them as well as to the person with good vision.


Another example of the diffusion disc. John Barrymore in a starring production.

Do not confuse my disapproval of diffusion in the close-up as compared to fog scenes, mist, night effects or sequences which may be photographed with a disc or made soft through low key lighting. I am concerned with the diffused scenes which appear like this: Long shot of a room — three people standing, talking. Semi-close-up: same scene. Close-up: over shoulder of male to female—Diffusion Disc used. Close-up of male over female shoulder—scene is sharply photographed. Semi-close-up of male and female—slightly diffused. Close-up of female—heavily diffused. Close-up of male—very sharp. Semi-close-up of male and female—slightly diffused. Close-up of female—heavily diffused, and so on and so on.

Such procedure is hard on the eyes; the effect is like removing glasses from eyes that need them and then replacing them at intervals and continuing the procedure for some time. This is annoying and disconcerting and is the effect which the diffusion creates when used as illustrated above.

In Lewis Jacob's book, "Rise of the American Film," he speaks of diffused photography as highly flattering to women because it softens features and eliminates signs of age. This may be true but it is also true that it is a sacrifice of good photography and detrimental to the eyes.

Recently I was engaged in the production of a film on the rehabilitation of the blind called, "Sight Unseen." This film, as many others I have made on the preservation of eyesight, has made me sight conscious, and that has been my reason for bringing the subject of diffusion to the fore. I feel quite sure that if the diffusion sequences which I see from time to time were incorporated into one reel and shown to eye specialists, they would agree that it is as detrimental to the eyes as poor light and other harmful factors.

In the cameraman's art nothing compares to a good sharp picture, which is a blessing to the eyes as well as an artistic achievement. With the aid of science we eliminated the projector flicker, we improved our lighting equipment, we developed pancromatic films, the finest coated lenses, the best camera equipment, and excellent color processes. With all these advantages and legitimate elements we should leave the stage of imitation to the past, where it belongs.

What do yuh say, Bud? Wanna buy a Diffusion Disc?

Boom Forecast in Industrial Films

American industries, especially those manufacturing and marketing heavy machinery, are setting up substantial appropriations this year for the production and distribution of 16mm. films to advertise and promote their products abroad. This information is disclosed by Joseph A. Thomas, president of Telefilm Studios of Hollywood. Among companies employing 16mm. films for promotion of heavy machinery are: Cincinnati Milling Machine Co., Jones & Lamson of Springfield, Vt., Allis-Chalmers of Milwaukee, and Caterpillar Tractor Co., Thomas stated.

Monument Valley District in Two Filmosound Releases

The Monument Valley area is featured in two latest releases of Bell & Howell's Filmosound library. Both are in 16 mm. kodachrome. Lt. Jack Breed produced the color-sound one reeler, "Navajo Sand Painting;" while Joe Ott produced "American Antiquities." Latter begins at Mesa Verde, and then swings through the Navajo National Monument, Monument Valley, Rainbow Bridge, and other sections of the district.

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Current Assignments of A. S. C. Members

As this issue of American Cinematographer goes to press, A. S. C. Directors of Photography are assigned to the following feature productions currently shooting in the various Hollywood studios:

Columbia Studios

Joseph Walker, "The Al Jolson story" (Technicolor).

Henry Freulich, "The Devil's Mask," with Anita Louise and Jim Bannon.

Phil Tannura, "One Life Too Many," with Leslie Brooks, George Macready and Forrest Tucker.

International Pictures

Milton Krasner, "The Dark Mirror," starring Olivia de Havilland, Lew Ayres, Thomas Mitchell.

Metro-Goldwyn-Mayer

Charles Rosher, "Fiesta," (Technicolor) with Esther Williams and John Carroll.

Harry Stradling, "Till the Clouds Roll By," (Technicolor) with Judy Garland, Robert Walker, Frank Sinatra.

Karl Freund, "You Were There," starring Katharine Hepburn and Robert Taylor.

Robert Planck, "The Show-Off," with Red Skelton, Marian Maxwell, Marjorie Main.

Charles Schoenbaum, second unit, "Gentleman's Gentleman," (Technicolor).

Paramount

Russell Metty, "The Perfect Marriage," (Hal Wallis Prod.) with Loretta Young, David Niven, Nona Griffith, Virginia Field.

Lionel Lindon, "O. S. S.," with Alan Ladd, Geraldine Fitzgerald, Patric Knowles.

Ben Kline, "Danger Street," (Pine-Thomas Prods.) with Jane Withers, Robert Lowery, Bill Edwards.

Daniel Fapp, "Suddenly It's Spring," starring Fred MacMurray and Paulette Goddard.

Ray Rennahan, "Perils of Pauline," (Technicolor) starring Betty Hutton with John Lund, William Demarest, Billy De Wolfe, Constance Collier.

PRC

Jack Greenhalgh, "Avalanche," (Imperial Films) with Bruce Cabot and Roscoe Karns.

RKO Studios

Leo Tover, "Desirable Woman," with Joan Bennett, Robert Ryan, Charles Bickford, Virginia Huston.

Roy Hunt, "A Likely Story," with Bill Williams, Barbara Hale.

George Barnes, "Sinbad the Sailor," (Technicolor), with Douglas Fairbanks, Jr., Maureen O'Hara, Walter Slezak.

Jack McKenzie, "Child of Divorce," with Sharyn Moffett, Regis Toomey, Madge Meredith, Walter Reed.

Republic Studios

John Alton, "The Ghost Goes Wild," with James Ellison, Anne Gwynne, Ruth Donnelly, Edward Everett Horton.

Henry Sharp, "The Fabulous Suzanne," (Steve Sekely Prod.) with Barbara Britton, Rudy Vallee, Bill Henry, Otto Kruger, Veda Ann Borg.

20th Century-Fox

Ernest Palmer, "Three Little Girls in Blue," (Technicolor) with June Haver, Vivian Blaine, George Montgomery, Frank Latimore.

Charles Clarke, "Margie," (Technicolor), with Jeanne Crain, Alan Young, Glenn Langan, Lynn Bari, Hatty McDaniel, Esther Dale.

Joseph LeShelle, "Claudia and David," with Dorothy McGuire, Robert Young, John Sutton, Rose Hobart, Gail Patrick, Harry Davenport.

(Continued on Page 106)

Filmo Diplomat Again Available

Distribution to photographic dealers of Bell & Howell's postwar movie equipment is progressing smoothly. One of the first items to appear on dealers shelves is the Filmo Diplomat, 16mm. silent motion picture projector.

Designed for the home movie maker, the Diplomat possesses many exclusive Bell & Howell features. These improvements are claimed to add a professional quality to home movie projection.

A new cooling system permits the use of a 100-watt lamp in addition to the standard 500- and 750-watt lamps used previously. The 1000-watt lamp is primarily intended for showing movies in halls, clubs, etc. All lamps are prealigned and pre-focused to obtain maximum efficiency of each lamp.

Every moving part is gear driven, even to the feed and take-up spindles. There are no chains or belts, inside or outside. Gears are fully encased and silent.

The Diplomat is constructed to show not only silent film, but sound film as well. Although the sound is not heard, many fine motion pictures formerly restricted to sound-on-film projectors may now be shown on this machine.

Still projection of any single picture is accomplished simply by disengaging the cluth. A perforated, all-metal safety shutter operates automatically to protect the film from heat. A reverse lever is provided for running the film backwards to achieve amusing effects or to repeat a scene.

A Bell & Howell 2-inch F 1.6 lens, which transmits a large volume of light, is standard equipment. However, it may be replaced instantly with any one of a full range of extra lenses to meet special requirements.

Self-lock sprockets, a patented device, make incorrect film threading an impossibility. They also materially lengthen the life of the film by exerting less strain and pull.

Positive View Finder For Cameras

(Continued from Page 84)

Magnification is produced as the variator barrel is moved toward the rear stationary lens. What happens here, of course, is that the combined focal length of the front stationary lens and the front variator lens increase because the spacing between these two lenses becomes wider. Simultaneously the rear variator lens begins to combine its power with that of the rear stationary lens. Fig. 2 (b) shows what takes place here. By moving the variator barrel, the focal length of the combined front stationary lens and front variator lens becomes longer, while the focal length of the combined rear variator lens and rear stationary lens shortens as the spacing between them decreases. Thus, the change from a reduced image to an enlarged one occurs when the combined focal length of the front optical elements become greater than the combined focal length of the rear elements.

The largest magnification is produced by the vari-focal system when, in the extreme rear position, the image formed by the front stationary lens falls into the front variator lens. In this position the vari-focal system covers only a small field angle and therefore corresponds to a telephoto lens. (See Fig. 2 (c).)

Two serious disadvantages to the vari-focal system as a complete view-finder when used alone have been overcome in the new positive view-finder. It has been noted, of course, that the objective lens combination produces an inverted image, an objectionable feature in a view-finder. A more serious defect of the "variator" system lies in the fact that the image moves in opposite direction to the movement of the "variator" barrel from the inside of the rear "variator lens" to the inside of the front "variator" lens. So in spite of being a real image, it cannot be framed.

Combined with the vari-focal system to overcome these disadvantages is an erector system. Fig. 3 is a diagrammatic representation of the view-finder. The dotted line separates the vari-focal mechanism from the erector system. This erector system acts practically as a second telescope which collimates the image through the combination of the variator and the stationary lens.

This new image is not only upright as the name erector system implies, but it remains practically stationary within the erector system, because the optical elements of this second telescope do not change. Therefore, a frame can be placed at the image point which corresponds to the size of the film frame and which shows accurately the image which will be produced by the corresponding camera lens.

A cross section through the actual view-finder, illustrated in Fig. 4, shows how the optical elements are arranged.

Filming Rockets

(Continued from Page 88)

Allen Thompson, A. S. C., who was originally with the unit and transferred after two years of service and chief photographers' mate Harold Filan.

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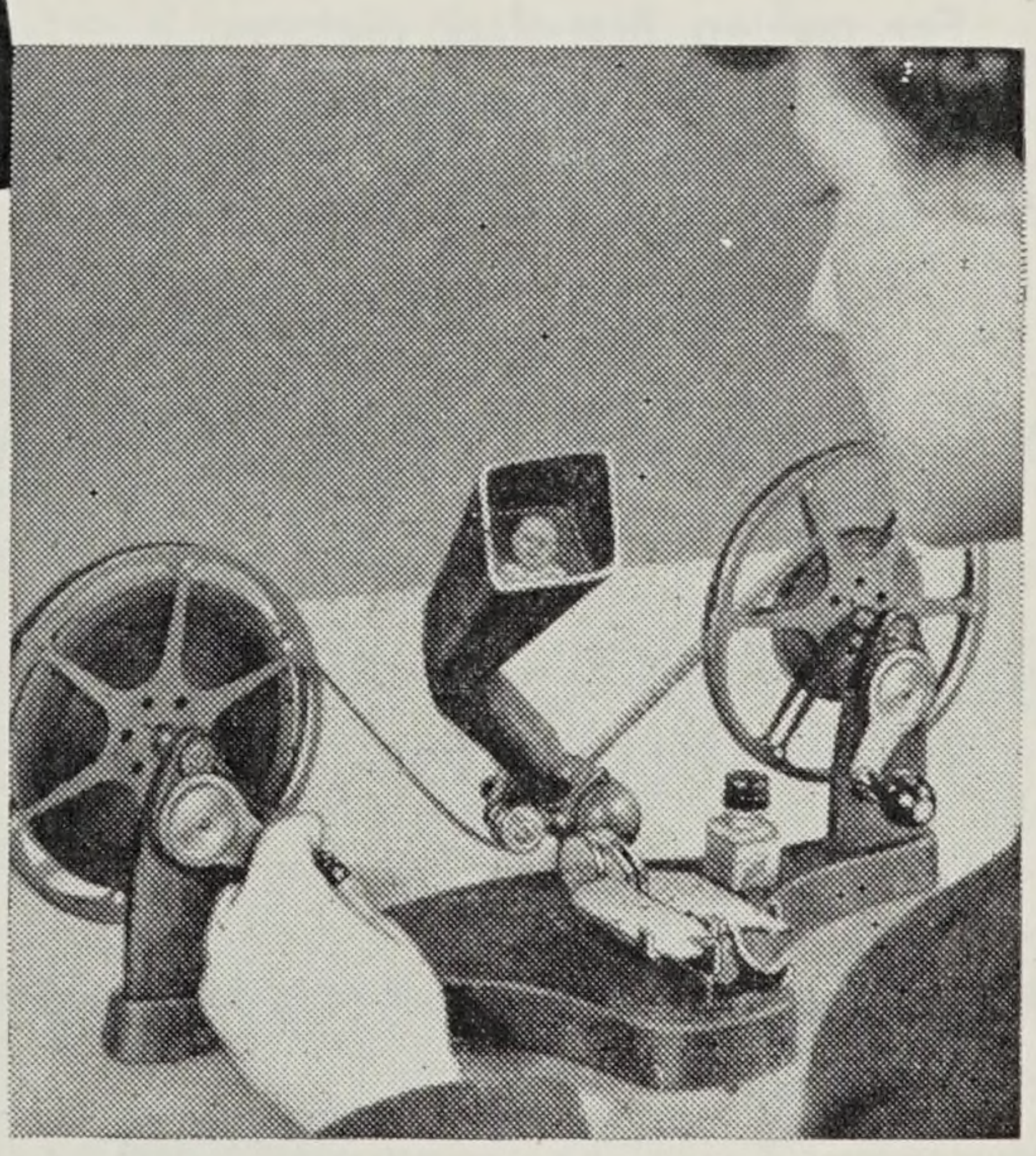

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The Fluid Camera

(Continued from Page 82)

as a *trucking shot* in which the camera actually follows right along with the subject in his course of action.

In this type of shot the camera's motivation for movement is usually pretty well established, since it depends upon and is keyed to the movement of one of the players. The effect to be desired, as in all types of camera movement, is *smoothness*—since a jerky pattern of movement would detract more from the scene than it would add. If the camera glides smoothly along, the audience will not be consciously aware of the movement in itself.

Another type of moving camera shot is the *pull-back*, in which the scene opens with a close-up, the camera later pulling back to present a much wider angle of the scene. This device is used where it is first necessary to focus the audience's attention on a certain small detail of the scene, later broadening the angle to show the context in which that detail is mounted.

In the film, "The Lost Weekend," photographed with superb realism by John Seitz, A.S.C., there wa sone memorable scene of this type that opened with a striking *super* close-up of the main character's eye as it fluttered open, bloodshot and bleary, the eye of a drunkard. The camera then pulled back to a medium long shot of the character as he awakened from his stupor and began to stumble about the room. In this shot, the close-up of the eye was the keynote of the scene. It set the psychological mood; it focussed the audience's attention by filling the screen with a small but vital detail of the character's state of being. The initial impression created by that close-up carried over to the remainder of the scene and influenced the audience's reception of what followed.

A corollary to this type of shot is a device in which the camera first shows a long shot of the scene and then pushes in to a close shot of a certain segment of the action. This is a widely used type of camera movement and has the effect of first orienting the audience as to locale, action, and period, before moving in to treat dramatically a smaller part of the overall scene.

A variation of this technique is the *zoom* shot, in which for dramatic effect the camera first shows a relatively wide angle of the scene, then rapidly pushes or *zooms* in to a close-up of a specific detail of the scene. The *zoom* shot, when correctly used, is a dynamic way to focus audience attention on a dramatically important facet of the scene.

Except in a travelogue, it is not considered effective technique to *pan* a static object—although many film-makers have done so in an effort to force action into an otherwise dead scene. At best this is a forced technique and should be avoided except where inserted for special effect. Mere movement of the camera can never compensate for a lack of action within the scene.

Occasionally in a photoplay, the camera—in its role of all-seeing eye—becomes a wandering reporter, browsing here and there to pick up bits of action and characterization, then moving on to select other facets of the situation, the sum total of which adds up to the creation of considerable atmosphere. A notable example of this technique was used in the film, "Casablanca," photographed by Arthur Edeson, A.S.C. In the sequence establishing the interior of "Rick's Cafe Americain" (main locale of the story), the camera picked its way through the crowds, stopping at various tables just long enough to pick up scraps of color and atmosphere, then moving on. It moved exactly as a casual observer might move if he were threading his way through the maze of tables, catching a glimpse of this person or that and overhearing an occasional shred of conversation. The effect in the film was to set the unusual mood of this exotic locale, to identify the types and characters involved in the story, and to prepare the audience for the action that was to follow.

In studio parlance, whenever the camera moves and comes to rest on a new composition, the maneuver is known as a *camera stop*. Certain scenes, especially in musical extravaganzas, involve a great many camera stops. In fact, when this type of film was first becoming popular certain directors and cameramen (as a matter of professional achievement) used to vie with one another to see how many camera stops they could get into one continuous scene. Actually, if well done, this type of scene is more effective than a series of cuts in portraying a musical number, but when camera movement becomes an end in itself, the result is bound to be clumsy and without meaning.

One otherwise competent director of musicals and light comedies used to insist that the camera be moving in every scene. He would have the camera pushing in, pulling back, zooming down from the sky or up from the ground, whether the scene required camera movement or not. In one film this particular director

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shot—a film containing well over 300 scenes—there was only *one* scene that was absolutely a static shot. Audiences left the theatre after viewing this film complaining of headaches from being "whirled around so much."

At the other extreme was an equally competent director of dramatic themes who insisted that the camera should *never* be moved. His compositions on the screen were particularly forceful and artistic, but he was reluctant to move the camera for fear his careful composition would be destroyed. As a result, his action within the frame was stilted, inhibited, held back. You could almost sense his players watching for the chalk marks on the set floor so that they would not step outside the bounds of the static frame. In one drama that this director shot—a film crammed full of artistic and static compositions—there was only one short *follow shot.* The result on the screen was a static drama.

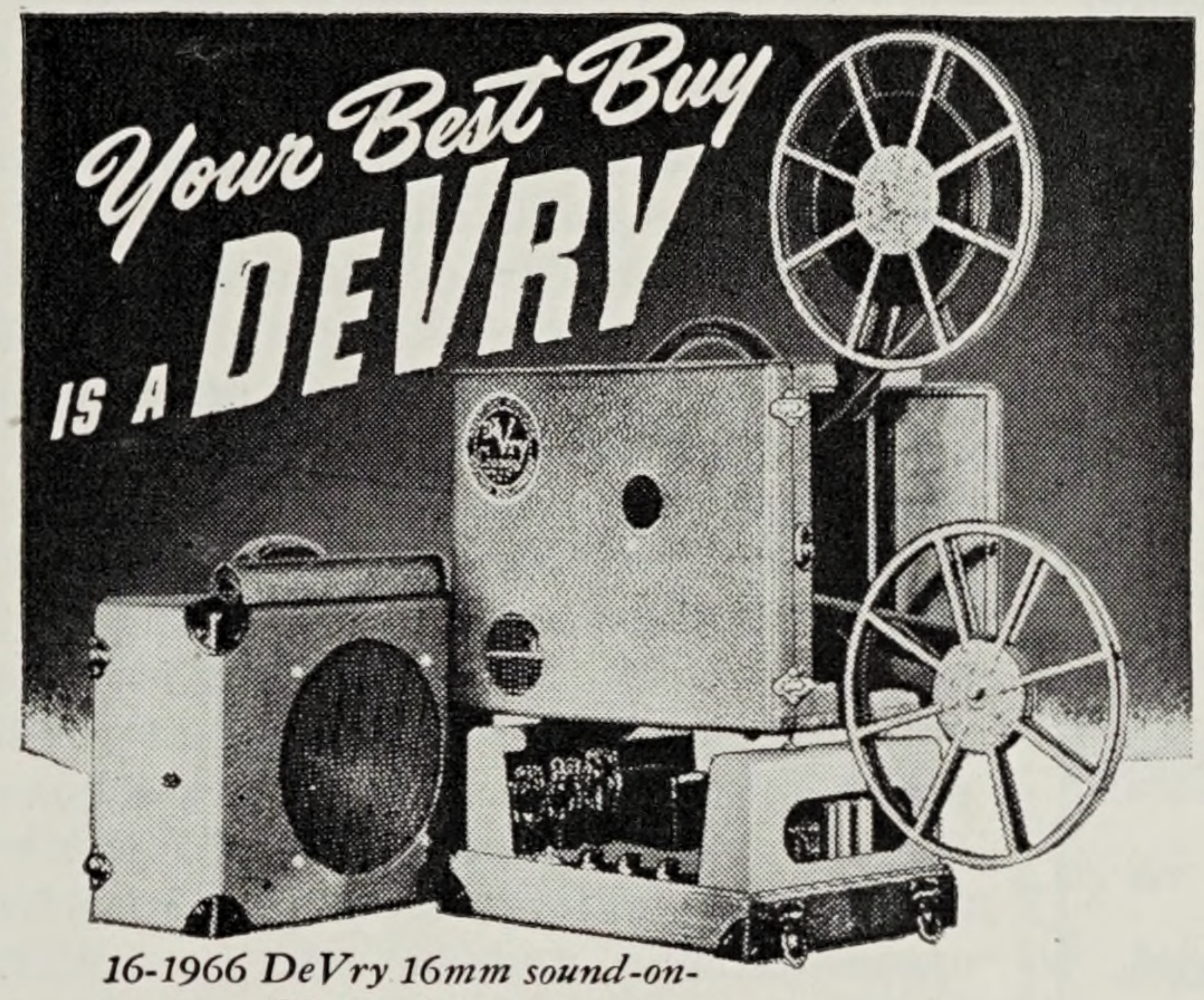
Obviously, intelligent camera movement is the result of close, careful preplanning between the director and cameraman. The director, in his interpretation of the author's screenplay, plans his action and consults with the cinematographer as to how that action can most effectively be portrayed on the screen. Often it is found that a series of consecutive compositions can be embodied in one scene and connected by well-motivated camera movement. The resulting scene (which otherwise would have been staged as a series of short choppy scenes) becomes a *fluid* continuity of changing compositions that move smoothly, one into the other.

Arthur Miller, A.S.C., who has photographed such cinematic masterpieces as: "How Green Was My Valley" and "Song of Bernadette," is a cinematographer who uses the *fluid* camera to best advantage. His camera, never self-conscious, glides in and out of the scene searching and selecting those elements which are important to the film narrative.

Joseph Ruttenberg, A.S.C., has demonstrated in films such as: "Gaslight" and "Valley of Decision," that a smoothly moving camera is a forceful complement to well-staged action. Coupled with a mellow lighting style, his *fluid* technique of camera movement—always original, but never obtrusive—gives depth and perspective to the action as designed by the director.

Joseph LaShelle, A.S.C., winner of last year's Academy award in black and white cinematography for his crisp, forceful lensing of the film, "Laura," is a cinematographer who excells in the intelligent application of *fluid* camera movement to action on the screen. He has a particular genius for breaking a scene down into various forceful compositions and joining these different "points of view" together through smooth camera movement. Some of the things his camera does seem incredible when analyzed, but on the screen a close-up gives way to a long shot which then evolves into a *follow* shot, without the audience being aware of the actual camera movement. Mr. LaShelle combines his incisive understanding of the *fluid* camera with a graphic, forceful style of lighting which is at the same time artistic and dynamic, as evidenced in such films as: "Hangover Square" and "Fallen Angel."

The *fluid* camera is a device that belongs peculiarly to the photoplay. It has the quality of action that is essential if motion pictures are to be truly "moving" pictures. Skillfully used, camera movement gives the motion picture unlimited scope to select and present on the screen the various elements of the story in dramatic and forceful relationship to one another.



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Aces of the Camera

(Continued from Page 86)

townsmen was a series of stereopticon slides showing the devastation that followed the earthquake and fire that had ripped San Francisco in the preceding April. It was a successful venture, financially speaking, but Paul felt a certain chagrin in the fact that his pictures still failed to move.

Then he heard that in the neighboring town of Tuscola there was a "black-top" showing the most astounding motion picture of all time, "The Great Train Robbery"; 1000 feet of action packed drama. Paul had to see it. And having seen it he had to see the manager who, probably to save himself a lot of trouble, gave him the job of projectionist.

When the family moved to California later that year Paul was supposed to continue his studies at U.S.C., but so badly had he been bitten by the movie bug that, to keep peace in the family, his father bought a movie house in Sawtelle so that Paul could be a projectionist. That should have taken care of everything, but it didn't. Paul decided that he not only wanted to show motion pictures, he wanted to make them.

The first thing he needed, obviously, was a motion-picture camera. So he decided to make one. He was handicapped by the fact that he had never seen a motion picture camera, but armed with an Eberhardt-Schneider catalogue and the innards of an old Melies projector he set to work. Slowly, very slowly and painstakingly the pieces were fitted into place and enclosed in a plywood box of enormous dimensions. On the front was mounted an old Darbot f. 4.5 lens from a still camera, and, because he still had vivid memories of "The Great Train Robbery", and "The Counterfeiters", and believed that films were all made on the same piece of film and in sequence, there was another box on top to hold a thousand feet of film.

It was a crude and unwieldy affair, but it worked. With it he shot news subjects which were sold to the old Gaumont News. The fire at Venice Pier constituted his first sale, but the check that came in payment for the footage was only a symbol; the satisfaction was in the realization of an ambition.

Then in 1912, Paul became a charter member, number 36, of Local 150, Los Angeles. He worked as projectionist at the Edison; the Clune, at 5th and Main Streets, and was also the instructor at Clune's school of projection which that early day showman had on the second floor of his exchange at 9th and Main. Paul was well established in his profession. Everything looked rosy. And then his financeé, the girl he subsequently married, moved with her family to San Diego.

To those who have been in love it will be no news that Paul went to San Diego. While he was wandering around down there he found a movie house that had been closed. Inquiry disclosed the fact that it was in the hands of the bank, and so Paul went to see that institution. He told the banker that he was a projectionist and that he was sure he would be able to make a go of the house if only they would let him open it. The banker thought it was a good idea, too, and told Paul that he could have the place for a rental of $50.00 a month. And Paul agreed that would be a very reasonable rental. The only trouble was he had 50 cents, not 50 dollars. And then there was another matter, the banker explained; there was no projector. That did complicate matters. But only for a moment. Paul had made up his mind. He told the man he was sure he could get a projector from T. L. Tally the big theater owner in Los Angeles; and the man was apparently so encouraged by such zeal that he agreed, if Paul could get a projector, to let him have the first month's rent on the cuff.

Financed by a five-dollar bill borrowed from his future mother-in-law Paul returned to Los Angeles. Mr. Tally came through with the projector and even allowed Paul credit on his first week's film rental. Everything had worked out perfectly. Until they went to plug in the projector. There was no juice.

The banker was sympathetic when Paul explained his new difficulty, but he insisted that he had made it perfectly clear that there was no electricity hooked up. "But we can't quit now," Paul protested. "I guess you're right," agreed the banker. "I'll put up the money for the installation out of my own pocket."

The theater was a great success, and soon became one of three that Paul owned and operated in San Diego. One of these three houses he equipped for sound in 1913, using the Edison Cameraphone system. In the other two houses he had sound-effects men, working with paraphenalia similar to that used by sound-effects men in radio today, concealed behind the screen.

It is interesting to recall that the Edison Cameraphone Sound System consisted of two cylinder phonographs that played behind the screen. In order to maintain some degree of synchronization it was necessary for the projectionist to crank faster or slower as the occasion demanded. Each record ran for a quarter of a reel at which point the phonograph operator would have to switch to the other machine. The subjects made with sound were mostly scenes from vaudeville acts.

During this period Paul built a studio out in the Mission Hills district of San Diego; and with a Pathe camera, and later with a Gaumont 'beater type' camera, made comedies. His cast was com-

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posed of the members of a stock company playing at the Savoy Theatre at the time, and his developing was done by one Roy Jones who had the local Kodak finishing lab. Paul made the prints in his camera.

When Paul returned to Hollywood in 1915 it was to work for Thomas H. Ince, in the studios located at what was then Inceville; a site now marked by the junction of Sunset Blvd. and Roosevelt Highway. When Irvin V. Willat, who was in charge of the camera department for Ince, interviewed him, Paul pleaded complete ignorance of motion picture cameras for fear that Willat would give him as his first assignment something too tough for him to handle. So he landed in the title department. But not for long. Willat discovered that Paul knew more than he had professed and moved him into the trick department where he taught him the tricks that are the basis of the special effects work he does today.

There were hardy pioneers among Paul's associates at Inceville. Bobby Newhart, Clyde De Vinna, Chet Lyons, Chic MacGill and Dev Jennings were among those who trained their cameras on such stars as Dorothy Dalton, Enid Bennett, Bessie Barriscale, Howard Hickman, Bill Hart and Charles Ray, who were directed by such men as Scott Sydney, Raymond West and Dick Stanton. A distinguished company that blazed a clear trail; fast company for a neophite cameraman.

In the trick department, working with an artist by the name of Irving Martin, Paul made what may have been the first matte shot ever used in production. It was used in a picture entitled "Peggy", starring Billie Burke.

Then he was given the job of production cameraman on "The Pinch Hitter", Charles Ray's first starring vehicle and Victor Schertizinger's first directorial assignment. The trio were a success, and Paul remained as Charles Ray's cameraman through his next seven pictures which included "The Egg-Crate Wallop", the picture that made Ray famous.

Paul remained with Ince for nearly ten years, moving with that company from Inceville to what is now M.G.M. in Culver City, then to the old Biograph lot at Georgia and Girard Streets—a place that is now a street-car barn—then back to Culver City to what is now the R.K.O.-Pathe lot. It was on the last

(Continued on Next Page)

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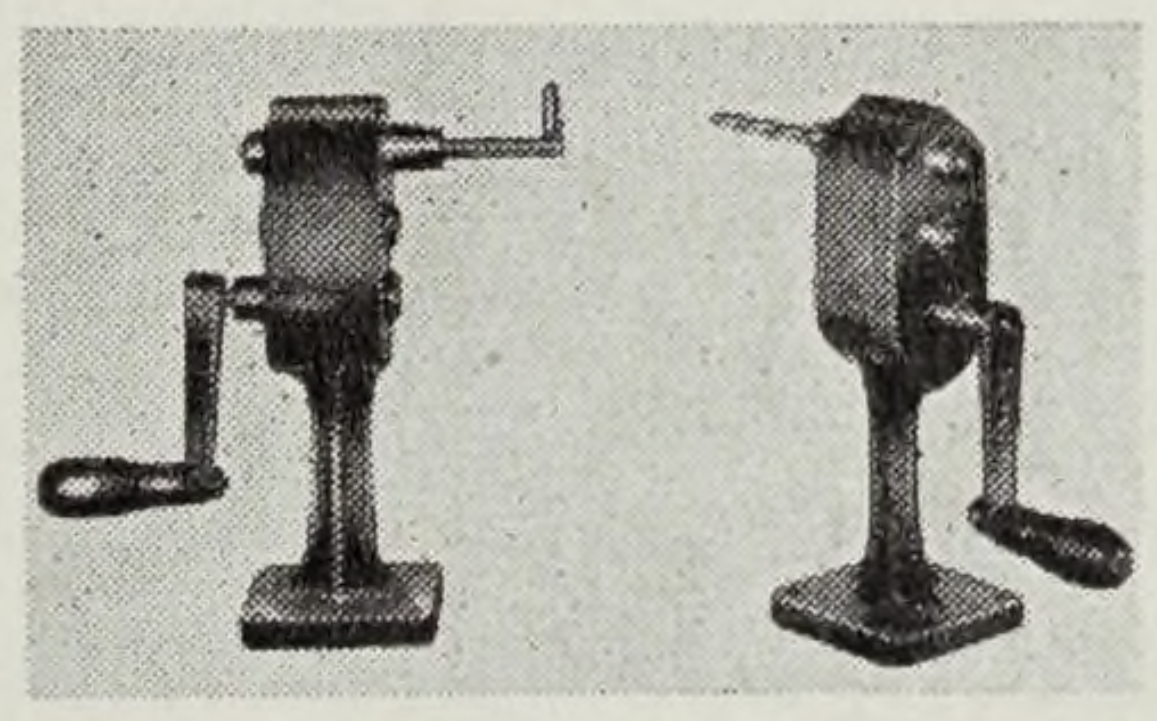

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Aces of the Camera

(Continued from Preceding Page)

named that he was put in charge of the camera and the trick department. And there he developed the first gimbel tripod, a device to simulate the rolling of the ocean and a boon to cameramen with a weakness for mal-de-mer.

It was here, too, that he built the first stage exclusively for trick work and on which he made his first process shot in 1923. This shot was made for a picture entitled, "Sahara", starring Louise Glaum; and a brief recounting of the difficulties involved provide a good yardstick to measure the technical progress made to date.

The screen was a piece of white silk 6 ft. x 8 ft. and had to be woven to order in New York. There were no high-intensity arcs, no fast film and no fast lenses. And because no one had ever thought of synchronous motors at that time the actors had to try to make like love while straddling an 80-ft. drive shaft that connected the camera to the projector. As a 'first' it was a notable achievement, but the limitations were so severe that the system had to be abandoned for all practical purposes.

Sam Goldwyn borrowed him from Ince and sent him to Italy on "Ben Hur". When he returned he found that the studio had become M.G.M. and he carried on under that banner until 1933, when he went with Goldwyn.

Ince also lent Paul to Doug Fairbanks when that worthy was making "Robin Hood", a picture famous in its day for the high standards of its special effects. Paul stayed on to do "Tess of the Storm Country".

Since 1940 Vern Walker has been fortunate enough to have the services of this erudite unseen Ace of the Camera to support him in the special effects department at R.K.O. Currently Paul is working on "Notorious", for the great Hitchcock; a director who really knows how to get the most out of special effects.

Paul stays in the trick department because he is one of those people who likes to have a problem. He particularly likes to do something a director says can't be done. But besides working on the problems other people think up for him he also thinks up some for himself. His immediate self-imposed problem is the creation of a process screen that can be photographed from any angle. It will be a great help, he feels sure, not only in pictures but also in television which will, he asserts, have to use process eventually.

Hobbies? O, yes! He raises orchids. And maybe that's a sad commentary when a guy like Paul Eagler has to raise his own.

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A.S.C. Assignments

(Continued from Page 100)

United Artists

Lucient Andriot, "The Strange Woman," (Mars Film Corp.) with Hedy Lamarr, George Sanders, Louis Hayward, Gene Lockhart.

James Van Trees, "Angel On My Shoulder," (Premier Prods.) with Paul Muni, Anne Baxter, Claude Rains, Onslow Stevens.

Karl Struss, "Mr. Ace and the Queen," (Tivoli Prod.) with George Raft, Sylvia Sidney, Sid Silvers.

Universal Studios

Hal Mohr, "Fandango," (Technicolor) with Yvonne De Carlo, Brian Donlevy, Jean Pierre Aumont, Eve Arden.

George Robinson, "Love Takes a Holiday," with Joan Davis, Jack Oakie, Mischa Auer.

Paul Ivano, "Little Miss Big," with Fay Holden, Beverly Simmons.

Warner Brothers

Ernest Haller, "Humoresque," starring Joan Crawford and John Garfield, with Oscar Levant, Ruth Nelson, J. Carroll Naish.

James Wong Howe, "The Sentence," starring Ann Sheridan, with Kent Smith, Robert Alda, Bruce Bennett.

Ted McCord, "A Very Rich Man," with Sydney Greenstreet, Martha Vickers, Dane Clark, Alan Hale.

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